

Informational Leaflet 94

BRISTOL BAY RED SALMON (Oncorhynchus nerka), 1966

A COMPILATION OF THE CATCH AND ESCAPEMENT DATA

Collected by:

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Division of Commercial Fisheries

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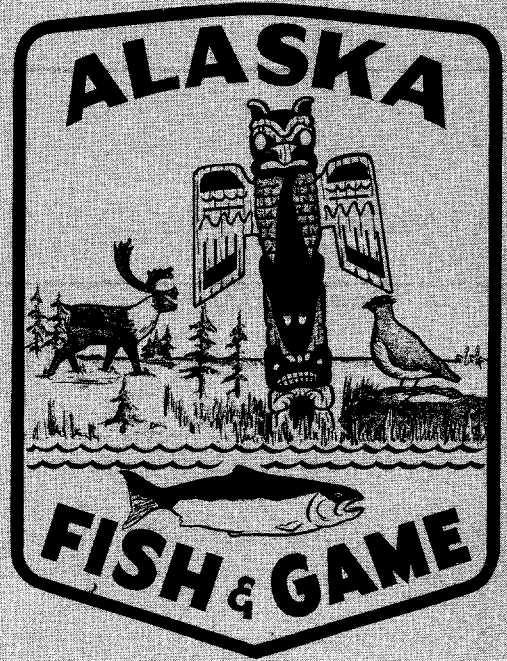


TABLE OF CONTENTS

<u>Page (s)</u>	
1 - 6	List of Tables
7	List of Figures
8 - 10	Introduction
11	Approximate Locations of Catch Sampling and Counting Towers, Bristol Bay, 1966 (Figure 1)
12 - 18	Summary Tables of Bristol Bay Catch and Escapement (Tables 1-5)
19 - 20	Summary of 1966 Season for the Naknek-Kvichak District
21	Map of 1966 Naknek-Kvichak Fishing District (Figure 2)
22	Naknek-Kvichak District Catch and Escapement by Age Group, Red Salmon, 1966 (Table 6)
23 - 25	Naknek-Kvichak District Commercial Catch Data (Tables 7-10)
26 - 29	Kvichak River Escapement Data (Tables 11-15)
30 - 33	Branch River Escapement Data (Tables 16-20)
34 - 37	Naknek River Escapement Data (Tables 21-25)
38	Summary of 1966 Season for the Egegik District
39	Map of 1966 Egegik Fishing District (Figure 3)
40	Egegik District Catch and Escapement of Red Salmon by Sex, by Age Group, 1966 (Table 26)
41 - 42	Egegik District Commercial Catch Data (Tables 27 - 29)
43 - 45	Egegik River Escapement Data (Tables 30 - 33)
46	Summary of 1966 Season for the Ugashik District
47	Map of 1966 Ugashik Fishing District (Figure 4)
48	Ugashik District Catch and Escapement of Red Salmon by Sex, by Age Group, 1966 (Table 34)

Page (s)

49 - 50	Ugashik District Commercial Catch Data (Tables 35 - 37)
51 - 53	Ugashik River Escapement Data (Tables 38 - 41)
54 - 55	Summary of 1966 Season for the Nushagak District
56	Map of 1966 Nushagak Fishing District (Figure 5)
57	Nushagak District Catch and Escapement of Red Salmon by Age Group, 1966 (Table 42)
58 - 60	Nushagak District Commercial Catch Data (Tables 43 - 46)
61 - 63	Igushik District Commercial Catch Data (Tables 47 - 50)
64 - 67	Wood River Escapement Data (Tables 51 - 55)
68 - 71	Igushik River Escapement Data (Tables 56 - 60)
72 - 75	Nuyakuk River Escapement Data (Tables 61 - 65)
76	Summary of 1966 Season for the Togiak District
77	Map of 1966 Togiak Fishing District (Figure 6)
78	Togiak District Catch and Escapement, Age Composition of Red Salmon, 1966 (Table 66)
79 - 81	Togiak District Commercial Catch Data (Tables 67 - 70)
82 - 86	Togiak District Escapement Data (Tables 71 - 76)
87	Discussion of North Side of the Alaska Peninsula Fishing Areas
88	Map of Important Red Salmon Statistical Areas on the North Side of the Alaska Peninsula (Figure 7)
89 - 90	Bear River Daily Red Salmon Escapement Counts, 1966 (Table 77)
91 - 92	Nelson River Daily Red Salmon Escapement Counts, 1966 (Table 78)
93 - 95	North Side Alaska Peninsula, Estimates of Red Salmon Escapement Based on Aerial Surveys, 1966 (Table 79)
96 - 97	North Side Alaska Peninsula, Catch by Week for Statistical Areas where Red Salmon Catches Occurred, 1966 (Table 80)

LIST OF TABLES

Table No.

- 1 1966 Bristol Bay Red Salmon Return
- 2 1966 Bristol Bay Red Salmon Catch by District and Fishing Period,
and Vessel Registration
- 3 1966 Bristol Bay Red Salmon Return by Age Group by System
- 4 1966 Bristol Bay Red Salmon Return, Percent of Each Age Class
by System
- 5 1966 Bristol Bay Red Salmon Return by Ocean Age Group by
System
- 6 Naknek-Kvichak District Catch and Escapement by Age Group,
Red Salmon, 1966
- 7 Naknek-Kvichak Commercial Catch, Sex Composition of Red
Salmon by Fishing Period, 1966
- 8 Naknek-Kvichak Commercial Catch, Age Composition of Male
Red Salmon by Fishing Period, 1966
- 9 Naknek-Kvichak Commercial Catch, Age Composition of Female
Red Salmon by Fishing Period, 1966
- 10 Naknek-Kvichak Commercial Catch, Age Composition of Red
Salmon, Both Sexes Combined, 1966
- 11 Kvichak River Daily Red Salmon Escapement Counts, 1966
- 12 Kvichak River Escapement, Sex Composition of Red Salmon by
Date, 1966
- 13 Kvichak River Escapement, Age Composition of Male Red Salmon
by Date, 1966
- 14 Kvichak River Escapement, Age Composition of Female Red
Salmon by Date, 1966
- 15 Kvichak River Escapement, Age Composition of Red Salmon,
Both Sexes Combined, 1966

LIST OF TABLES (Cont.)

Table No.

- | | |
|----|---|
| 16 | Branch River Daily Red Salmon Escapement Counts, 1966 |
| 17 | Branch River Escapement, Sex Composition of Red Salmon by Date, 1966 |
| 18 | Branch River Escapement, Age Composition by Date, Male Red Salmon, 1966 |
| 19 | Branch River Escapement, Age Composition by Date of Female Red Salmon, 1966 |
| 20 | Branch River Escapement, Age Composition of Both Sexes Combined for Red Salmon, 1966 |
| 21 | Naknek River Daily Red Salmon Escapement Counts, 1966 |
| 22 | Naknek River Escapement, Sex Composition of Red Salmon by Date, 1966 |
| 23 | Naknek River Escapement, Age Composition by Date, Male Red Salmon, 1966 |
| 24 | Naknek River Escapement, Age Composition by Date, Female Red Salmon, 1966 |
| 25 | Naknek River Escapement, Age Composition of Both Sexes Combined for Red Salmon, 1966 |
| 26 | Egegik District, Catch and Escapement of Red Salmon by Sex by Age Group, 1966 |
| 27 | Egegik Commercial Catch, Sex Composition of Red Salmon by Fishing Period, 1966 |
| 28 | Egegik Commercial Catch, Age Composition of Male Red Salmon by Fishing Period, 1966 |
| 29 | Egegik Commercial Catch, Age Composition of Female Red Salmon by Fishing Period, 1966 |
| 30 | Egegik River Daily Red Salmon Escapement Counts, 1966 |

LIST OF TABLES (Cont.)

Table No.

- | | |
|----|---|
| 31 | Egegik River Escapement, Sex Composition by Date, for Red Salmon, 1966 |
| 32 | Egegik River Escapement, Age Composition of Male Red Salmon by Date, 1966 |
| 33 | Egegik River Escapement, Age Composition of Female Red Salmon by Date, 1966 |
| 34 | Ugashik District, Catch and Escapement of Red Salmon by Sex and Age Group, 1966 |
| 35 | Ugashik Commercial Catch, Sex Composition of Red Salmon by Fishing Period, 1966 |
| 36 | Ugashik Commercial Catch, Age Composition of Male Red Salmon by Fishing Period, 1966 |
| 37 | Ugashik Commercial Catch, Age Composition of Female Red Salmon by Fishing Period, 1966 |
| 38 | Ugashik River Daily Red Salmon Escapement Counts, 1966 |
| 39 | Ugashik River Escapement, Sex Composition of Red Salmon by Date, 1966 |
| 40 | Ugashik River Escapement, Age Composition of Male Red Salmon by Date, 1966 |
| 41 | Ugashik River Escapement, Age Composition of Female Red Salmon by Date, 1966 |
| 42 | Nushagak-Igushik District, Catch and Escapement by Age Group, Red Salmon, 1966 |
| 43 | Nushagak-Igushik Commercial Catch, Sex Composition of Red Salmon by Fishing Period, 1966 |
| 44 | Nushagak-Igushik Commercial Catch, Age Composition of Male Red Salmon by Fishing Period, 1966 |

LIST OF TABLES (Cont.)

Table No.

- | | |
|----|---|
| 45 | Nushagak-Igushik Commercial Catch, Age Composition of Female Red Salmon by Fishing Period, 1966 |
| 46 | Nushagak-Igushik District Commercial Catch, Age Composition of Red Salmon Both Sexes Combined, 1966 |
| 47 | Igushik Commercial Catch, Sex Composition of Red Salmon by Fishing Period, 1966 |
| 48 | Igushik Commercial Catch, Age Composition of Male Red Salmon by Fishing Period, 1966 |
| 49 | Igushik Commercial Catch, Age Composition of Female Red Salmon by Fishing Period, 1966 |
| 50 | Igushik Commercial Catch, Age Composition of Red Salmon, Both Sexes Combined, 1966 |
| 51 | Wood River Daily Red Salmon Escapement Counts, 1966 |
| 52 | Wood River Escapement, Sex Composition of Red Salmon by Date, 1966 |
| 53 | Wood River Escapement, Age Composition of Male Red Salmon by Date, 1966 |
| 54 | Wood River Escapement, Age Composition of Female Red Salmon by Date, 1966 |
| 55 | Wood River Escapement, Age Composition for Red Salmon, Both Sexes Combined, 1966 |
| 56 | Igushik River Daily Red Salmon Escapement Counts, 1966 |
| 57 | Igushik River Escapement, Sex Composition of Red Salmon by Date, 1966 |
| 58 | Igushik River Escapement, Age Composition of Male Red Salmon by Date, 1966 |
| 59 | Igushik River Escapement, Age Composition of Female Red Salmon by Date, 1966 |

LIST OF TABLES (Cont.)

Table No.

- | | |
|----|---|
| 60 | Igushik River Escapement, Age Composition of Red Salmon, both Sexes Combined, 1966 |
| 61 | Nuyakuk River Daily Red Salmon Escapement Counts, 1966 |
| 62 | Nuyakuk River Escapement, Sex Composition of Red Salmon by Date, 1966 |
| 63 | Nuyakuk River Escapement, Age Composition of Male Red Salmon by Date, 1966 |
| 64 | Nuyakuk River Escapement, Age Composition of Female Red Salmon by Date, 1966 |
| 65 | Nuyakuk River Escapement, Age Composition of Red Salmon, Both Sexes Combined, 1966 |
| 66 | Togiak District Catch and Escapement, Age Composition of Red Salmon, 1966 |
| 67 | Togiak Commercial Catch, Sex Composition of Red Salmon by Fishing Period, 1966 |
| 68 | Togiak Commercial Catch, Age Composition of Male Red Salmon by Fishing Period, 1966 |
| 69 | Togiak Commercial Catch, Age Composition of Female Red Salmon by Fishing Period, 1966 |
| 70 | Togiak Commercial Catch, Age Composition of Red Salmon, 1966 |
| 71 | Togiak River Daily Red Salmon Escapement Counts, 1966 |
| 72 | Togiak River Escapement, Sex Composition of Red Salmon by Date, 1966 |
| 73 | Togiak River Escapement, Age Composition of Male Red Salmon by Date, 1966 |

LIST OF TABLES (Cont.)

Table No.

- | | |
|----|--|
| 74 | Togiak River Escapement, Age Composition of Female Red Salmon by Date, 1966 |
| 75 | Togiak River Escapement, Age Composition of Red Salmon, Both Sexes Combined, 1966 |
| 76 | Togiak Tributaries, Kulakak System and Total Togiak District Red Salmon Escapement by Age Class, 1966 |
| 77 | Bear River Daily Red Salmon Escapement Counts, 1966 |
| 78 | Nelson River Daily Red Salmon Escapement Counts, 1966 |
| 79 | North Side Alaska Peninsula, Estimates of Red Salmon Escapement based on Aerial Surveys, 1966 |
| 80 | North Side Alaska Peninsula and South Unimak Fishery, Red Salmon Catch by Week by Statistical Area, 1966 |

LIST OF FIGURES

<u>Page</u>	<u>Figure</u>	
11	1	Approximate Locations of Catch Sampling and Counting Towers for Bristol Bay Red Salmon Run, 1966
21	2	Map of 1966 Naknek-Kvichak Fishing District
39	3	Map of 1966 Egegik Fishing District
47	4	Map of 1966 Ugashik Fishing District
56	5	Map of 1966 Nushagak-Igushik Fishing District
77	6	Map of 1966 Togiak Fishing District
88	7	Map of Important Red Salmon Statistical Areas on North Side of Alaska Peninsula

INTRODUCTION

This publication is the fourth in a series intended to annually present catch and escapement statistics for the Bristol Bay red salmon fishery.

Personnel of the Alaska Department of Fish and Game's Commercial Fisheries Division collected all data. Dr. C.J. DiCostanzo of the U.S. Bureau of Commercial Fisheries furnished all scale readings for both catch and escapement. Personnel of the Commercial Fisheries Division, Management and Research Sections and the Statistics Section of the Alaska Department of Fish and Game and the Department of Administration Data Processing Division furnished all the data tabulations. Scientists participating in the tabulation and analysis of these data includes: Mr. Kenneth, Mr. Glenn Davenport, Mr. Michael Nelson, Mr. Angus Robertson, Mr. Donald Siedelman, Mr. Richard Nelson, Mr. Ken Valentine, Mr. Mel Seibel and Mr. Steven Pennoyer. Many additional personnel also participated in the collection and preliminary tabulation of these data. Miss Sally Howlett and Mrs. Agnes Jackson served as typists for the final report. Mr. Steven Pennoyer served as editor and assembled this material in its present form.

METHODS AND MATERIAL

These data were collected by field crews stationed at counting towers and at selected canneries throughout the Bristol Bay area. Figure 1 shows the relative location of the various sampling stations. Each sampling station was supplied with a caliper or measuring board, appropriate forms, and gum cards for salmon scale collection. Scales were placed directly on the gum cards and pressed to form plastic impressions. Lengths were recorded to the nearest millimeter and weights to the nearest one tenth of a pound.

Statistical analysis of the absolute error incurred in the estimation of the proportion of a given age class in a population of the magnitude encountered in Bristol Bay indicated that a minimum sample size of 150-200 fish per time period was required. Since considerable difference exists between the age composition of male and female red salmon, particularly in the commercial catch, sampling requirements are set separately for the two sexes. Therefore, a sample size of about 400 fish per time period was required. Taking into account imbalances in the sex ratio, illegible or missing scales and the sampling of species other than red salmon, a sample size requirement of 600 fish per time period was set. Pending analysis of variations between time periods, the sampling time period was set as a fishing period in the catch and each three days in the escapement. Due to greater than expected sex imbalances, large numbers of illegible or missing scales, or a lack of fish, this sample size goal was not always achieved. In this case successive period's samples were grouped to attain the required minimum number of fish per sex.

Escapement counts and samples of the fish in the escapement were obtained for nine of the red salmon spawning systems in Bristol Bay accounting for over 90% of the known spawning escapement. The systems sampled were the Naknek, Kvichak,

Branch, Egegik, Ugashik, Nuyakuk, Wood, Igushik and Togiak. Additionally aerial estimates were made of the red salmon escapements to the Nushagak-Mulchatna, Snake, and Kulukak Rivers and the Togiak tributaries. Escapement counts were made from the elevated towers (either mounted in boats or on the shore) located along the banks of the rivers. Counts were made for ten minutes out of the hour for each side of the river, multiplied by six to obtain hourly estimates and summed to obtain daily estimates.

Escapement sampling was carried out daily when possible. In all cases but one, sampling crews used beach seines for capture gear and tried to obtain approximately 200 fish daily. A live trap was employed to capture salmon in the Togiak River. Sex, length and scales were obtained from all fish captured. At times the sampling effort fell below these goals because of interference of poor weather, lack of migrating salmon or some other reason.

Catch figures given herein are final catch figures tabulated from punch cards obtained from fish ticket receipts. Chum salmon, which are mixed with the red salmon catch on many of the fish ticket receipts, were deducted from the total catch by district and by period to yield a final red salmon catch. Percentages of chum salmon in the catch were obtained by random sampling in all districts but the Togiak. These percentages were used to weight the catch in the Egegik and Ugashik districts and as a check on the cannery reports which were used in the Naknek-Kvichak, Nushagak and Togiak districts.

The catch was sampled at five locations throughout the Bay. The sampler at the Alaska Packers' Association Egegik plant sampled the Egegik catch and took half the required sample from the Ugashik catch. The sampler at the Red Salmon cannery at Naknek sampled the Naknek-Kvichak catch and took half the required sample from the Ugashik catch. The Igushik and Nushagak catches were sampled at the Columbia Wards Fisheries Ekuk plant and miscellaneous samples from the Nushagak and other districts were taken at the Pacific Alaska Fisheries cannery at Dillingham. The Togiak district catch was sampled at the Togiak Fisheries cannery in Togiak.

The cannery fish samples were taken by selecting fish randomly from the conveyor belts as the salmon moved into the cannery storage bins. Except in the Togiak district fish were taken from the belt without regard to species (red or chums) and placed in specially constructed sampling bins to facilitate the taking of measurements. In the Nushagak district chums were removed from the sampling bins, counted and returned to the belt. In the Egegik, Ugashik and Naknek-Kvichak districts both chums and reds were sampled and separated later on the basis of scale analysis. In the Togiak district the different species were sampled separately.

The samplers were instructed to obtain a sample of 600 fish per district per fishing period. In the case of period extensions or periods lasting over five days they were instructed to obtain a 120 fish sample for each additional day or portion thereof. Samplers were instructed to spread their period sample over as many scow loads as possible to insure a representative sampling of the catch. A maximum sample of 200 fish per scow load was set. Set net catch deliveries were sampled as time allowed,

but, except in the Nushagak, primary importance was attached to sampling the drift net catch on the scows since it represents the largest proportion of the total catch. Also, the drift catch is thought to be more representative of the catch as a whole since it is not restricted to any one part of a fishing district. In the following tables the "numbers of samples" refers to the number of different scow loads, or truck loads, of fish sampled each period.

Weights, lengths and scales were taken from 150 fish of each sex during the peak of the catch in each district. Also, lengths were taken from every fish sampled in both catch and escapement. This data is being tabulated and analyzed and will be presented in a separate publication at a later date.

Data for the north side of the Alaska Peninsula were collected by Alaska Department of Fish and Game personnel working out of Cold Bay.

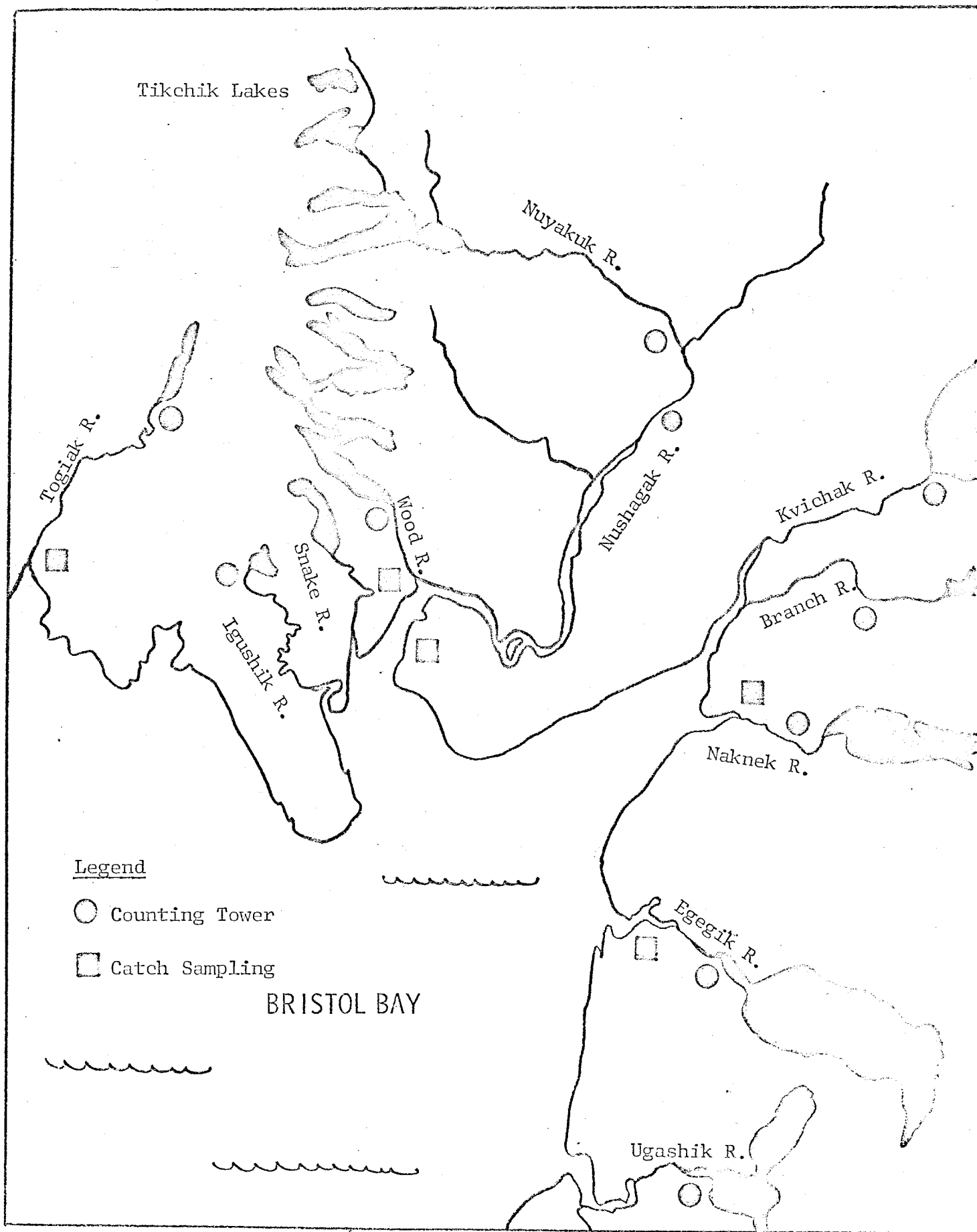
In this report, remarks appropriate to each system are included with the data for that system. A map of each fishing district is also included.

Age destination used throughout this paper is the Gilbert-Rich notation instead of the European method sometimes used on the west coast.

<u>Gilbert-Rich</u>	<u>European</u>	
3 ₂	1.1	One winter in freshwater, one winter in ocean, in third year
4 ₃	2.1	Two winters in freshwater, one winter in ocean, in fourth year
5 ₄	3.1	Three winters in freshwater, one winter in ocean, in fifth year
3 ₁	0.2	No winter in freshwater, two winters in ocean, in third year
4 ₂	1.2	One winter in freshwater, two winters in ocean, in fourth year
5 ₃	2.2	Two winters in freshwater, two winters in ocean, in fifth year
6 ₄	3.2	Three winters in freshwater, two winters in ocean, in sixth year
4 ₁	0.3	No winter in freshwater, three winters in ocean, in fourth year
5 ₂	1.3	One winter in freshwater, three winters in ocean, in fifth year
6 ₃	2.3	Two winters in freshwater, three winters in ocean, in sixth year
7 ₄	3.3	Three winters in freshwater, three winters in ocean, in seventh year
6 ₂	1.4	One winter in freshwater, four winters in ocean, in sixth year
7 ₃	2.4	Two winters in freshwater, four winters in ocean, in seventh year

It is the purpose of this report to present these statistics in a form which will serve the needs of scientists concerned with this fishery. No attempt will be made to draw conclusions or discuss the merits or shortcomings of the data collection procedure.

APPROXIMATE LOCATIONS OF CATCH SAMPLING AND COUNTING TOWERS
BRISTOL BAY, 1966



1966 BRISTOL BAY RED SALMON RETURN

SYSTEM	CATCH	ESCAPEMENT	TOTAL RETURN
KVICHAK RIVER	4,168,575	3,775,184	7,943,759
BRANCH RIVER	136,301	174,336	310,637
NAKNEK RIVER	1,092,662	1,016,445	2,109,107
TOTAL NAKNEK-KVICHAK	5,397,538	4,965,965	10,363,503
EGEGIK RIVER	2,101,174	804,246	2,905,420
UGASHIK RIVER	445,458	704,436	1,149,894
WOOD RIVER	754,734	1,208,682	1,963,416
IGUSHIK RIVER	238,888	206,360	445,248
SNAKE RIVER	2,808	4,500 <u>1/</u>	7,308
NUYAKUK RIVER	132,536	161,010	293,546
NUSHAGAK-MULCHATNA	41,305	50,174	91,479
TOTAL NUSHAGAK-IGUSHIK	1,170,271	1,630,726	2,800,997
TOGIAK RIVER		91,098	
TOGIAK TRIBUTARIES		13,100 <u>1/</u>	
KULUKAK SYSTEM <u>2/</u>		18,800 <u>1/</u>	
TOTAL TOGIAK DISTRICT	199,799	122,998	322,797
TOTAL BRISTOL BAY	9,314,240	8,228,371	17,542,611

1/ Escapement estimates based on aerial surveys of spawning grounds.

2/ Salmon harvested in this system are included in the Togiak district commercial catch.

TABLE 2. 1966 BRISTOL BAY RED SALMON CATCH BY DISTRICT AND FISHING PERIOD AND VESSEL REGISTRATION

NAKNEK/KVICHAK DISTRICT					
Fishing Period ^{1/}					
Number	Date and Time		Hour	Vessels ^{2/} Registered	Red Salmon Catch
1	-June 18 9 AM		--		1
2	June 20	10 AM-June 22 10 AM	48	927	36,746
3	June 23	1 PM-June 25 1 PM	48	976	83,714
4	June 28	6 AM-June 28 6 PM	12	1,064	637,748
5	June 30	8 PM-July 1 8 AM	12	1,101	347,253
6	July 2	9 AM-July 3 9 AM	24	1,200	2,303,885
7	July 6	1 PM-July 7 1 AM	12 ^{3/}	1,188	
	July 7	1 AM-July 7 1 PM	12 ^{3/}	1,182	1,236,168
8	July 8	2 PM-July 9 2 AM	12	1,183	394,122
9	July 11	4 AM-July 11 4 PM	12	1,148	155,621
10	July 12	4 AM-July 12 4 PM	12	1,141	154,576
11	July 18	9 AM-July 23 9 AM	120		45,058
12	July 25	9 AM-July 30 9 AM	120		1,900
13	August 1	9 AM-			746

Total red salmon catch NAKNEK/KVICHAK

5,397,538

Total of 204 fishing hours during regulatory period June 20-July 17.

EGEGIK DISTRICT

1	-June 18 9 AM				2,991
2	June 20	10 AM-June 22 10 AM	48	340	30,949
3	June 23	1 PM-June 25 1 PM	48	357	126,248
4	June 28	5 AM-June 20 5 AM	24	358	195,493
5	July 1	7 AM-July 2 7 AM	24	342	423,733
6	July 3	9 AM-July 4 9 AM	24	343	425,649
7	July 5	11 AM-July 6 11 AM	24	343	449,912
8	July 7	12 N-July 8 12 N	24	342	288,618
9	July 10	2 AM-July 16 12 PM	166	271	154,156
10	July 18	9 AM-July 23 9 AM	120		3,409
11	July 25	9 AM-July 30 9 AM	120		0
12	August 1	9 AM-			16

Total red salmon catch EGEGIK

2,101,174

Total of 382 fishing hours during regulatory period June 20-July 17.

TABLE 2. 1966 BRISTOL BAY RED SALMON CATCH BY DISTRICT AND FISHING PERIOD AND VESSEL REGISTRATION (Cont.)

UGASHIK DISTRICT						
Fishing Period ^{1/}					Vessels ^{2/}	Red Salmon
Number	Date and Time		Hour	Registered	Catch	
1	- June 18		9 AM			55
2	June 20	10 AM-June 22	10 AM	48	142	2,414
3	June 23	1 PM-June 25	1 PM	48	143	12,124
4	June 28	5 AM-June 29	5 AM	24	143	
	June 29	5 AM-June 29	8 PM	15	140	27,329
5	July 2	9 AM-July 3	9 AM	24	129	64,710
6	July 5	11 AM-July 5	12 PM	13	129	35,445
7	July 6	12 N-July 6	12 PM	12	129	
	July 6	12 PM-July 7	12 N	12	129	206,867
8	July 12	4 AM-July 12	4 PM	12	145	52,127
9	July 15	8 AM-July 15	8 PM	12	151	24,381
10	July 18	9 AM-July 23	9 AM	120	149	16,025
11	July 25	9 AM-July 30	9 AM	120		3,596
12	August 1	9 AM-				385

Total red salmon catch UGASHIK

445,458

Total of 220 fishing hours during regulatory period June 20-July 17.

NUSHAGAK-IGUSHIK DISTRICT ^{4/}

3	June 6	9 AM-June 11	9 AM	120		3
4	June 13	9 AM-June 18	9 AM	120		1,200
5	June 20	10 AM-June 22	10 AM	48	546	3,021
6	June 22	2 PM-June 23	2 PM	24	524	4,459
7	June 25	6 PM-June 26	6 PM	24	398	12,219
8	June 29	10 PM-June 30	10 AM	12	393	18,844
9	July 2	11 AM-July 2	11 PM	12	305	
	July 2	11 PM-July 3	2 PM	15	307	321,790
10+11	July 5	2 PM-July 6	5 PM	27	307	
	July 6	5 PM-July 7	5 PM	24	307	
	July 7	5 PM-July 8	6 PM	25	312	
	July 8	6 PM-July 16	12 PM	198	612	748,159
12	July 18	9 AM-July 23	9 AM	120		49,273
13	July 25	9 AM-July 26	9 PM	36		4,957
14	July 28	9 AM-July 30	9 AM	48		3,541
15	August 1	9 AM-Aug. 6	9 AM	120		2,804
16	August 8	9 AM-Aug. 13	9 AM	120		0
17	August 15	9 AM-Aug. 20	9 AM	120		1

Total red salmon catch NUSHAGAK-IGUSHIK

1,170,271

Total of 409 fishing hours during regulatory period, June 20-July 17.

Note: Igushik section closed July 6 at 5 PM to July 8 at 3 AM.

TABLE 2. 1966 BRISTOL BAY RED SALMON CATCH BY DISTRICT AND FISHING PERIOD AND VESSEL REGISTRATION (Cont.)

TOGIAC DISTRICT						Vessels <u>2/</u> Registered	Red Salmon Catch
Number	Fishing Period <u>1/</u>				Hour		
1	-June 18				9 AM		292
2	June	20	9 AM-June 25	9 AM	120	96	4,584
3	June	27	9 AM-July 2	9 AM	120	96	23,280
4	July	4	9 AM-July 9	9 AM	120	96	54,473
5	July	11	9 AM-July 15	2 PM	101	96	59,178
6	July	18	9 AM-July 21	9 AM	72		38,995
7	July	25	9 AM-July 29	9 AM	96		10,395
8	August	1	9 AM-Aug. 6	9 AM	120		6,919
9	August	8	9 AM-Aug. 13	9 AM	120		1,585
10	August	15	9 AM-Aug. 20	9 AM	120		63
11	August	22	9 AM-Aug. 27	9 AM	120		33
12	August	29	9 AM-				2

Total red salmon catch TOGIAC

199,799

Total of 461 fishing hours during the regulatory period June 20-July 17.

Note: During the fishing season the Togiak River, Ungalikthluk and Nunavarchak sections were closed to fishing for a total of 91 hours in addition to the regular 48 hour weekend closures. The Kulukak, Osviak, Matogak, and Cape Peirce sections remained open for fishing 5 days a week throughout the season.

- 1/ Fishing period numbers are the codings used to separate catches on the computer runs.
- 2/ Vessels registered are listed when available.
- 3/ Set nets only in Naknek section.
- 4/ Red salmon were not taken during periods 1 and 2. These periods were used for other salmon species.

Table 3

1966 BRISTOL BAY RED SALMON RETURN
BY AGE GROUP BY SYSTEM

Age Group	Naknek-Kvichak	Egegik	Ugashik	Nushagak-Igushik	Togiak	TOTAL Bristol Bay
Number of Fish						
3 ₁	--	--	--	195	--	195
4 ₁	--	--	1,332	10,573	6,558	18,463
4 ₂	275,792	19,747	69,052	923,886	46,381	1,334,858
4 ₃	5,795	233	1,886	1,389	--	9,303
5 ₁	--	--	--	856	38	894
5 ₂	971,477	199,165	433,925	1,665,307	206,276	3,476,150
5 ₃	2,332,592	397,510	220,029	42,134	14,695	3,006,960
6 ₂	--	610	179	2,189	224	3,202
6 ₃	6,766,401	2,222,418	422,657	152,464	48,543	9,612,483
6 ₄	9,544	44,062	347	664	--	54,617
7 ₃		413	--	--	--	413
7 ₄	1,902	21,262	487	1,340	82	25,073
TOTAL	10,363,503	2,905,420	1,149,894	2,800,997	322,797	17,542,611

Table 4

1966 BRISTOL BAY RED SALMON RETURN,
PERCENT OF EACH AGE CLASS BY SYSTEM

Age Group	District					Total Bristol Bay
	Naknek-Kvichak	Egegik	Ugashik	Nushagak-Igushik	Togiak	
	Percent					
3 ₁	-	-	-	0.01	-	0.00
4 ₁	-	-	0.11	0.38	2.03	0.11
4 ₂	2.66	0.68	6.01	32.98	14.37	7.61
4 ₃	0.06	0.01	0.16	0.05	-	0.05
5 ₁	-	-	-	0.03	0.01	0.01
5 ₂	9.37	6.85	37.74	59.46	63.90	19.82
5 ₃	22.51	13.68	19.13	1.50	4.55	17.14
6 ₂	-	0.02	0.02	0.08	0.07	0.02
6 ₃	65.29	76.49	36.76	5.44	15.04	54.79
6 ₄	0.09	1.52	0.03	0.02	-	0.31
7 ₃	-	0.02	-	-	-	0.00
7 ₄	0.02	0.73	0.04	0.05	0.03	0.14
TOTALS	100.00	100.00	100.00	100.00	100.00	100.00

Table 5

1966 BRISTOL BAY RED SALMON RETURN
BY OCEAN AGE GROUP BY SYSTEM

District	Ocean Age Group				Total
	1	2	3	4	
Naknek-Kvichak					
No. of Fish	5,795	2,617,928	7,739,780	-	10,363,503
Percent	0.06	25.26	74.68	-	100.00
Egegik					
No. of Fish	233	461,319	2,442,845	1,023	2,905,420
Percent	0.01	15.88	84.08	0.03	100.00
Ugashik					
No. of Fish	1,886	289,428	858,401	179	1,149,894
Percent	0.16	25.17	74.65	0.02	100.00
Nushagak-Igushik					
No. of Fish	1,389	966,879	1,829,684	3,045	2,800,997
Percent	0.05	34.52	65.32	0.11	100.00
Togiak					
No. of Fish	-	61,076	261,459	262	322,797
Percent	-	18.92	81.00	0.08	100.00
Total Bristol Bay					
No. of Fish	9,303	4,396,630	13,132,169	4,509	17,542,611
Percent	0.05	25.06	74.86	0.03	100.00

NAKNEK-KVICHAK DISTRICT

The 1966 Naknek-Kvichak fishing district as shown in Figure 2 was the same as the previous two years. No boundary changes were required during the fishing season.

Regulations pertaining to gear limitations and mesh size remained unchanged for Bristol Bay in 1966. The allowable drift gillnet and set gillnet were 150 and 50 fathoms respectively. The minimum mesh size was 5 3/8 inches stretched measure.

The initial gear registration (drift and set net) for the Naknek-Kvichak district was 1,172 units. This represents an increase of 250 units or 27% over the 1965 season, however, district transfers varied the size of the drift gillnet fleet from 832 to 1,107 vessels. The largest transfer of vessels occurred from the Nushagak district just prior to the anticipated timing of the peak of the return to the Naknek-Kvichak district.

The 1966 Kvichak return was comparable to that of the previous dominant year plus one (1961) and provided a catch equal to the 11 year (1955-1965) average for the district.

Although the Naknek-Kvichak district return was only 23% as large as the record 1965 return, the largest recorded catch for a 24 hour period occurred at the peak of the run on July 3. This one period accounted for 42% of the season's catch. The short duration of the run plus the heavy concentration of fishing effort resulted in processing capacity of most canneries being exceeded. Catch limits of 2,000 fish per vessel were imposed by the industry to slow the heavy rush of fish.

Adverse weather conditions were prevalent throughout most of the fishing season. The unfavorable weather caused difficult operating conditions for the fishermen, but had no significant effect on fishing time.

The Naknek-Kvichak district catch accounted for 58% of the total Bristol Bay red salmon catch. In addition to the catch of 5,397,538 sockeye, other species were harvested as follows:

Kings:	5,456
Cohos:	4,096
Pinks:	142,221
Chums:	57,273

Sockeye salmon returning to the Kvichak, Branch and Naknek rivers are harvested as mixed stocks in the Naknek-Kvichak district (refer to Figure 2). A method has been developed whereby the total Naknek-Kvichak district catch is apportioned to each of the three river systems on the basis of the escapement received by each of these systems. The method is as follows:

- 1) On the basis of samples taken from the Naknek-Kvichak commercial catch (period samples are weighted by period catches) the total catch is separated according to sex, then each sex is separated according to age.
- 2) For each of the three river systems, the escapement is separated by sex and age class. Daily (or period) samples are weighted by daily (or period) escapement estimates.
- 3) For each sex, each age class of fish in the commercial catch is apportioned to the three river systems in the same proportion as this age class appears in the escapement of each of these rivers.

To express this method algebraically, let

C_{Mi} = Number of males of age class i occurring in total Naknek-Kvichak catch.

C_{KMi} , C_{BMi} , C_{NMi} = Number of males of age class i apportioned to the commercial catch of the Kvichak, Branch and Naknek stocks respectively, (note that $C_{Mi} = C_{KMi} + C_{BMi} + C_{NMi}$)

E_{Mi} = Number of males of age class i in the total escapements of the Kvichak, Branch and Naknek rivers, and

E_{KMi} , E_{BMi} , E_{NMi} = Number of males of age class i occurring in the Kvichak, Branch and Naknek escapements respectively.

Then we have the following formulas:

$$C_{KMi} = \frac{E_{KMi}}{E_{Mi}} C_{Mi}$$

$$C_{BMi} = \frac{E_{BMi}}{E_{Mi}} C_{Mi}$$

$$C_{NMi} = \frac{E_{NMi}}{E_{Mi}} C_{Mi}$$

Applying this method to each age class and also to the female sockeye provides an estimate of the number of sockeye each system contributed to the total district catch. This same method with slight modification is applied to the Nushagak district.

Figure 2. 1966 NAKNEK-KVICHAK COMMERCIAL FISHING DISTRICT

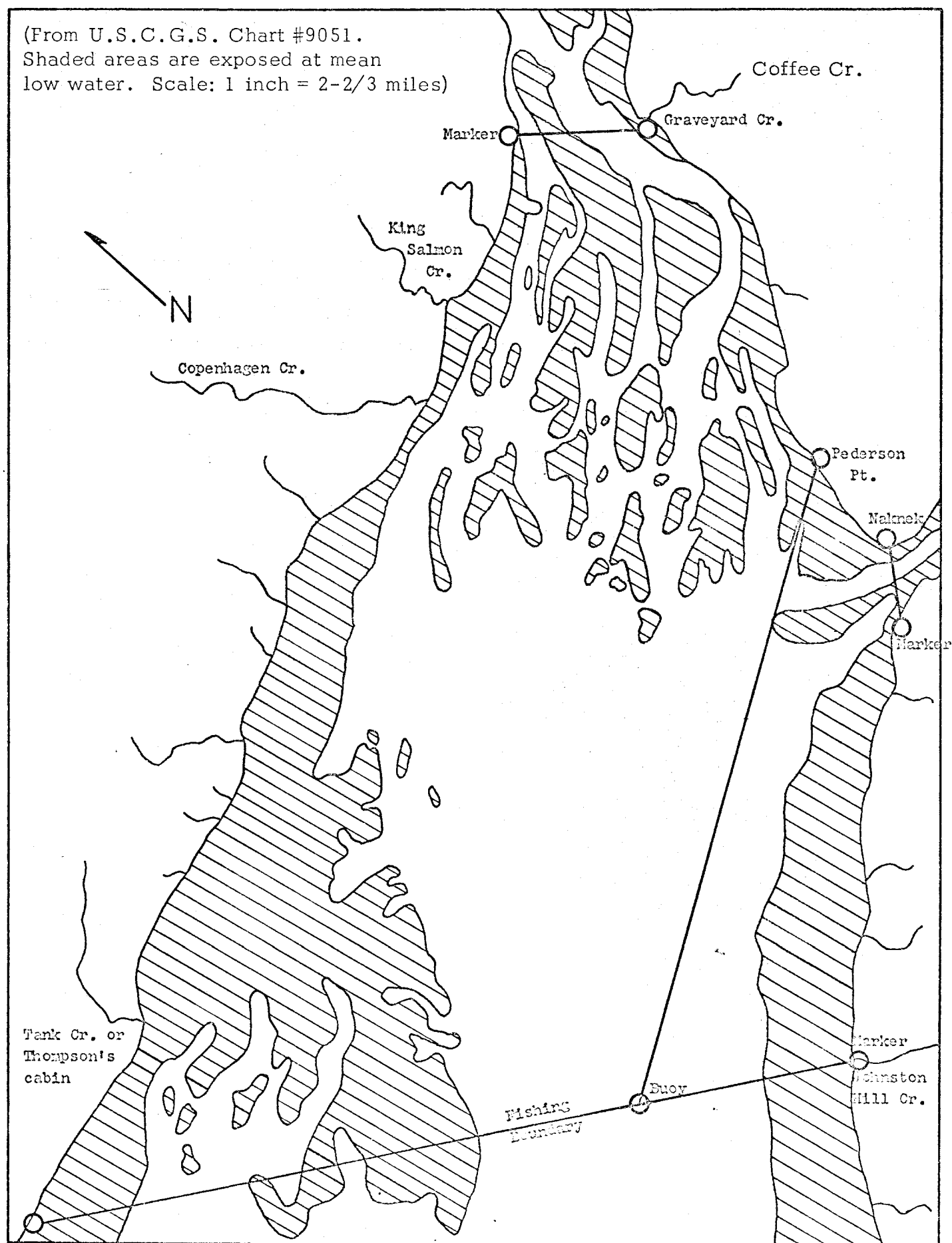


TABLE 6
NAKNEK-KVICHAK DISTRICT, CATCH AND ESCAPEMENT BY AGE GROUP
RED SALMON, 1966

	Age Group							
	4 ₂	4 ₃	5 ₂	5 ₃	6 ₃	6 ₄	7 ₄	TOTAL
<u>KVICHAK</u>								
Escapement	60,779	1,817	85,575	1,153,793	2,465,259	7,961	--	3,775,184
Catch	32,212	--	79,344	891,831	3,164,537	651	--	4,168,575
Subtotal	92,991	1,817	164,919	2,045,624	5,629,796	8,612	--	7,943,759
Percent	1.17	0.02	2.08	25.75	70.87	0.11	--	100.00
<u>BRANCH</u>								
Escapement	75,267	--	83,655	3,462	11,717	--	235	174,336
Catch	39,860	--	77,036	2,480	15,258	--	1,667	136,301
Subtotal	115,127	--	160,691	5,942	26,975	--	1,902	310,637
Percent	37.06	--	51.73	1.91	8.69	--	0.61	100.00
<u>NAKNEK</u>								
Escapement	45,011	3,978	335,809	155,941	474,899	807	--	1,016,445
Catch	22,663	--	310,058	125,085	634,731	125	--	1,092,662
Subtotal	67,674	3,978	645,867	281,026	1,109,630	932	--	2,109,107
Percent	3.21	0.19	30.62	13.33	52.61	0.04	--	100.00
<u>TOTAL NAKNEK-KVICHAK</u>								
Escapement	181,057	5,795	505,039	1,313,196	2,951,875	8,768	235	4,965,965
Catch	94,735	--	466,438	1,019,396	3,814,526	776	1,667	5,397,538
Subtotal	275,792	5,795	971,477	2,332,592	6,766,401	9,544	1,902	10,363,503
Percent	2.66	0.06	9.37	22.51	65.29	0.09	0.02	100.00

Table 7

NAKNEK-KVICHAK COMMERCIAL CATCH
SEX COMPOSITION OF RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. in Samples		Percent		Commercial Catch	No. in Catch	
		Males	Females	Males	Females		Males	Females
Thru 6/28	7	310	598	34.1	65.9	758,209	258,549	499,660
6/30-7/1	4	192	343	35.9	64.1	347,253	124,664	222,589
7/2-3	5	188	327	36.5	63.5	2,303,885	840,918	1,462,967
7/6-8/20	15	259	461	36.0	64.0	1,988,191	715,749	1,272,442
TOTALS	31	949	1,729	35.94	64.06	5,397,538	1,939,880	3,457,658

Table 8

NAKNEK-KVICHAK COMMERCIAL CATCH
AGE COMPOSITION OF MALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group					Total
			4 ₂	5 ₂	5 ₃ Percent	6 ₃	6 ₄	
Thru 6/28	7	310	2.9	5.2	25.2	66.4	0.3	100.0
6/30-7/1	4	192	2.6	7.3	25.0	65.1	---	100.0
7/2-7/3	5	188	1.6	9.0	18.1	71.3	---	100.0
7/6-	15	259	3.1	12.0	27.0	57.9	---	100.0
TOTALS	31	949						
WEIGHTED PERCENTAGES			2.39	9.49	22.77	65.31	.04	100.00

Table 9

NAKNEK-KVICHAK COMMERCIAL CATCH
AGE COMPOSITION OF FEMALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group					Total
			4 ₂	5 ₂	5 ₃ Percent	6 ₃	7 ₄	
Thru 6/28	7	598	1.0	8.2	10.2	80.4	0.2	100.0
6/30-7/1	4	343	1.5	7.0	15.7	75.5	0.3	100.0
7/2-7/3	5	327	0.3	8.3	8.3	83.1	---	100.0
7/6-	15	461	2.8	8.2	29.1	59.9	---	100.0
TOTALS	31	1,729						
WEIGHTED PERCENTAGES			1.40	8.16	16.71	73.68	0.05	100.00

Table 10

NAKNEK-KVICHAK COMMERCIAL CATCH, AGE COMPOSITION RED SALMON,
BOTH SEXES COMBINED, 1966

	⁴ ₂	⁵ ₂	⁵ ₃	⁶ ₃	⁶ ₄	⁷ ₄	TOTAL
MALES:							
Number	46,382	184,119	441,778	1,266,825	776	--	1,939,880
Percent	2.39	9.49	22.77	65.31	0.04	--	100.00
FEMALES:							
Number	48,353	282,319	577,618	2,547,701	--	1,667	3,457,658
Percent	1.40	8.16	16.71	73.68	--	0.05	100.00
SEXES COMBINED:							
Number	94,735	466,438	1,019,396	3,814,526	776	1,667	5,397,538
Percent	1.76	8.64	18.89	70.67	0.01	0.03	100.00

KVICHAK RIVER DAILY RED SALMON ESCAPEMENT, 1966

Date	Daily Counts	Daily Percent of Total	Accum. Counts
6/27	12	00.00	12
28	0	00.00	12
29	12	00.00	24
30	12,852	00.34	12,876
7/ 1	14,298	00.39	27,174
2	38,784	1.03	65,958
3	17,676	00.47	83,634
4	23,748	00.63	107,382
5	158,544	4.20	265,926
6	266,568	7.06	532,494
7	439,866	11.65	972,360
8	506,844	13.42	1,479,204
9	466,758	12.36	1,945,962
10	381,504	10.11	2,327,466
11	318,840	8.45	2,646,306
12	400,038	10.60	3,046,344
13	259,692	6.88	3,306,036
14	126,936	3.36	3,432,972
15	65,256	1.73	3,498,228
16	42,774	1.13	3,541,002
17	29,184	00.77	3,570,186
18	32,298	00.86	3,602,484
19	44,292	1.17	3,646,776
20	37,434	00.99	3,684,210
21	28,548	00.76	3,712,758
22	19,890	00.53	3,732,648
23	8,658	00.23	3,741,306
24	4,344	00.11	3,745,650
25	3,450	00.09	3,749,100
26	2,250	00.06	3,751,350
27	1,410	00.03	3,752,760
28	1,602	00.04	3,754,362
29	822	00.02	3,755,184
*	20,000	00.53	3,775,184
TOTAL	3,775,184	100.00	3,775,184

* estimated late season migration

TABLE 12

KVICHAK RIVER ESCAPEMENT, SEX COMPOSITION OF RED SALMON BY DATE, 1966

Date	No. of Samples	No. in Samples		Percent		Escapement	No. in Escapement	
		Males	Females	Males	Females		Males	Females
6/27-7/7	5	185	290	38.9	61.1	972,360	378,248	594,112
7/8-11	4	236	338	41.1	58.9	1,673,946	687,992	985,954
7/12-14	3	252	295	46.1	53.9	786,666	362,653	424,013
7/15-17	3	218	300	42.1	57.9	137,214	57,767	79,447
7/18-7/29	7	416	352	54.2	45.8	204,998	111,109	93,889
TOTAL	22	1,307	1,575	42.3	57.7	3,775,184	1,597,769	2,177,415

Table 13

KVICHAK RIVER ESCAPEMENT,
AGE COMPOSITION OF MALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	4 ₂	4 ₃	Age Group		6 ₃	6 ₄	Total
					5 ₂	5 ₃ Percent			
6/27-7/7	5	185	2.2	---	1.6	29.2	67.0	---	100.0
7/8-11	4	236	0.8	---	3.0	23.3	72.5	0.4	100.0
7/12-14	3	252	2.4	---	1.2	29.7	66.3	0.4	100.0
7/15-17	3	218	0.5	0.9	0.9	28.9	68.8	---	100.0
7/18-29	7	416	1.9	0.7	1.4	26.0	70.0	---	100.0
TOTALS	22	1,307							
WEIGHTED PERCENTAGES			1.56	0.08	2.07	26.54	69.49	0.26	100.00

Table 14

KVICHAK RIVER ESCAPEMENT,
AGE COMPOSITION OF FEMALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	4 ₂	4 ₃	Age Group		6 ₃	6 ₄	Total
					5 ₂	5 ₃ Percent			
6/27-7/7	5	290	1.4	---	2.7	33.8	62.1	---	100.0
7/8-11	4	338	1.5	---	2.1	31.0	65.1	0.3	100.0
7/12-14	3	295	2.0	---	2.4	36.6	59.0	---	100.0
7/15-17	3	300	1.7	0.3	3.3	40.7	53.7	0.3	100.0
7/18-29	7	352	3.1	0.3	3.1	38.1	54.8	0.6	100.0
TOTALS	22	1,575							
WEIGHTED PERCENTAGES			1.65	0.02	2.41	33.52	62.23	0.17	100.00

Table 15

KVICHAK RIVER ESCAPEMENT,

AGE COMPOSITION OF RED SALMON, BOTH SEXES COMBINED, 1966

	AGE GROUP						
	42	43	52	53	63	64	TOTAL
MALES:							
Number	24,930	1,298	33,120	424,041	1,110,178	4,202	1,597,769
Percent	1.56	0.08	2.07	26.54	69.49	0.26	100.00
FEMALES:							
Number	35,849	519	52,455	729,752	1,355,081	3,759	2,177,415
Percent	1.65	0.02	2.41	33.52	62.23	0.17	100.00
SEXES COMBINED:							
Number	60,779	1,817	85,575	1,153,793	2,465,259	7,961	3,775,184
Percent	1.61	0.05	2.27	30.56	65.30	0.21	100.00

Table 16

BRANCH RIVER DAILY RED SALMON ESCAPEMENT, 1966

Date	Daily Counts	Daily Percent of Total	Accum. Count
6/28	0	0.00	0
29	0	0.00	0
30	0	0.00	0
7/ 1	0	0.00	0
2	0	0.00	0
3	0	0.00	0
4	852	0.49	852
5	4,578	2.62	5,430
6	11,802	6.77	17,232
7	22,692	13.07	39,924
8	43,104	24.72	83,028
9	38,580	22.12	121,608
10	12,246	7.02	133,854
11	2,292	1.31	136,146
12	3,210	1.84	139,356
13	8,742	5.01	148,098
14	4,614	2.65	152,712
15	2,982	1.71	155,694
16	3,372	1.93	159,066
17	1,788	1.03	160,854
18	4,698	2.67	165,552
19	2,058	1.18	167,610
20	1,134	0.65	168,744
21	2,268	1.30	171,012
22	1,098	0.63	172,110
23	1,536	0.88	173,646
24	690	0.40	174,336
TOTAL	174,336	100.00	174,336

Table 17

BRANCH RIVER ESCAPEMENT, SEX COMPOSITION OF RED SALMON BY DATE, 1966

Date	No. in Samples	No. in Samples		Percent		Escapement	No. in Escapement	
		Males	Females	Males	Females		Males	Females
6/28-7/11	6	226	297	43.2	56.8	136,146	58,815	77,331
7/12-24	7	203	277	42.3	57.7	38,190	16,154	22,036
TOTALS	13	429	574	43.00	57.00	174,336	74,969	99,367

Table 18

BRANCH RIVER ESCAPEMENT, AGE COMPOSITION BY DATE, MALE RED SALMON, 1966

Period	No. of Samples	No. of Fish	Age Group					Total
			4 ₂	5 ₂	5 ₃ Percent	6 ₃	7 ₄	
6/28-7/11	6	226	46.5	42.0	2.7	8.4	0.4	100.0
7/12-24	7	203	26.1	68.0	1.0	4.9	---	100.0
TOTALS	13	429						
WEIGHTED PERCENTAGES			42.11	47.60	2.33	7.65	0.31	100.00

Table 19

BRANCH RIVER ESCAPEMENT, AGE COMPOSITION BY DATE,
FEMALE RED SALMON, 1966

Period	No. of Samples	No. of Fish	Age Group				Total
			4 ₂	5 ₂	5 ₃ Percent	6 ₃	
6/28-7/11	6	297	45.8	46.5	1.7	6.0	100.0
7/12-24	7	277	37.6	54.5	1.8	6.1	100.0
TOTALS	13	574					
WEIGHTED PERCENTAGES			43.98	48.28	1.72	6.02	100.00

Table 20

BRANCH RIVER ESCAPEMENT,
AGE COMPOSITION OF BOTH SEXES COMBINED FOR RED SALMON, 1966

	AGE GROUP					
	⁴ ₂	⁵ ₂	⁵ ₃	⁶ ₃	⁷ ₄	TOTAL
MALES:						
Number	31,565	35,686	1,750	5,733	235	74,969
Percent	42.11	47.60	2.33	7.65	0.31	100.00
FEMALES:						
Number	43,702	47,969	1,712	5,984	--	99,367
Percent	43.98	48.28	1.72	6.02	--	100.00
SEXES COMBINED:						
Number	75,267	83,655	3,462	11,717	235	174,336
Percent	43.17	47.99	1.99	6.72	0.13	100.00

Table 21

NAKNEK RIVER DAILY RED SALMON ESCAPEMENT, 1966

Date	Daily Counts	Daily Percent of Total	Accum. Count
6/20	24	0.00	24
21	222	0.02	246
22	66	0.01	312
23	60	0.01	372
24	114	0.01	486
25	336	0.03	822
26	222	0.02	1,044
27	1,920	0.19	2,964
28	3,156	0.31	6,120
29	5,190	0.51	11,310
30	16,200	1.59	27,510
7/ 1	28,492 *	2.80	56,002
2	10,189 *	1.00	66,191
3	66,552 *	6.55	132,743
4	42,672 *	4.20	175,415
5	209,278 *	20.59	384,693
6	218,130	21.46	602,823
7	228,660	22.50	831,483
8	86,328	8.49	917,811
9	30,792	3.03	948,603
10	8,760	0.86	957,363
11	23,712	2.33	981,075
12	11,808	1.16	992,883
13	3,894	0.38	996,777
14	3,576	0.35	1,000,353
15	4,278	0.42	1,004,631
16	2,688	0.26	1,007,319
17	4,638	0.46	1,011,957
18	3,444	0.34	1,015,401
19	696	0.07	1,016,097
20	168	0.02	1,016,265
21 (count suspended 1100 hrs.)	180	0.02	1,016,445
TOTAL	1,016,445	99.99	1,016,445

* Interpolated counts

Table 22

NAKNEK RIVER ESCAPEMENT, SEX COMPOSITION OF RED SALMON BY DATE, 1966

Date	No. of Samples	No. in Samples		Percent		Escapement	No. in Escapement	
		Males	Females	Males	Females		Males	Females
6/20-7/3	6	213	137	60.8	39.2	132,743	80,708	52,035
7/4-6	3	218	290	42.9	57.1	470,080	201,664	268,416
7/7-21	6	180	264	40.5	59.5	413,622	167,517	246,105
TOTALS	15	611	691	44.26	55.74	1,016,445	449,889	566,556

Table 23

NAKNEK RIVER ESCAPEMENT, AGE COMPOSITION BY DATE,
MALE RED SALMON, 1966

Period	No. of Samples	No. of Fish	4 ₂	4 ₃	Age Group		6 ₃	6 ₄	Total
					5 ₂	5 ₃ Percent			
To 7/3	6	213	20.2	1.4	24.9	35.7	17.8	---	100.0
7/4-6	3	218	6.4	---	31.7	21.1	40.4	0.4	100.0
7/7-21	6	180	5.0	1.7	33.9	16.7	42.7	---	100.0
TOTALS	15	611							
WEIGHTED PERCENTAGES			8.35	0.89	31.30	22.08	37.20	0.18	100.00

Table 24

NAKNEK RIVER ESCAPEMENT, AGE COMPOSITION BY DATE,
FEMALE RED SALMON, 1966

Period	No. of Samples	No. of Fish	4 ₂	Age Group		6 ₃	Total
				5 ₂	5 ₃ Percent		
6/20-7/3	6	137	5.8	30.0	19.7	44.5	100.0
7/4-6	3	290	1.0	35.2	10.3	53.5	100.0
7/7-21	6	264	0.7	34.5	7.6	57.2	100.0
TOTALS	15	691					
WEIGHTED PERCENTAGES			1.31	34.42	9.99	54.28	100.00

Table 25

NAKNEK RIVER ESCAPEMENT, AGE COMPOSITION OF BOTH SEXES

COMBINED FOR RED SALMON, 1966

	Age Group						
	4 ₂	4 ₃	5 ₂	5 ₃	6 ₃	6 ₄	Total
MALES:							
Number	37,586	3,978	140,811	99,339	167,368	807	449,889
Percent	8.35	0.89	31.30	22.08	37.20	0.18	100.00
FEMALES:							
Number	7,425	---	194,998	56,602	307,531	---	566,556
Percent	1.31	---	34.42	9.99	54.28	---	100.00
SEXES COMBINED:							
Number	45,011	3,978	335,809	155,941	474,899	807	1,016,445
Percent	4.43	0.39	33.04	15.34	46.72	0.08	100.00

EGEGIK DISTRICT

The Egegik fishing district boundaries (Figure 3) were the same as in the previous two years and, for the third successive year, this fishing area was adequate to harvest the red salmon return to this system.

The initial gear registration of 501 units was an increase of 71 (17%) units over the 1965 effort. The number of drift boats operating in the district fluctuated from 293 to 340 vessels and over 200 set nets participated during each fishing period.

The total return of 2,905,420 red salmon to the Egegik district was essentially as predicted. A catch of 2,101,174 red salmon was harvested during the season with 98% being taken from June 23 to July 17 in a well sustained run. The peak of the run in 1966 was on July 5.

Large catches of over 400,000 red salmon obtained during two of the fishing periods with a third period catch of over 350,000 along with large catches in the Naknek-Kvichak district, resulted in a 2,000 fish per boat limit being placed on the bulk of the fleet by all but one of the major canneries.

Weather conditions were consistently adverse throughout the season causing difficulties for the fishermen but no loss of fishing time.

The Egegik district red salmon catch accounted for 23% of the total Bristol Bay sockeye catch and 97% of the district catch of salmon.

In addition, other species harvested were as follows:

Kings:	1,949
Cohos:	1,932
Pinks:	8
Chums:	32,085

The escapement of red salmon past the fishery, 804,246 fish, was the same as the 14 year (1952-1965) average escapement into this system. The 1966 escapement marks the eighth consecutive year that good to excellent escapement has been obtained in the Egegik district.

Figure 3. 1966 EGEGIK COMMERCIAL FISHING DISTRICT

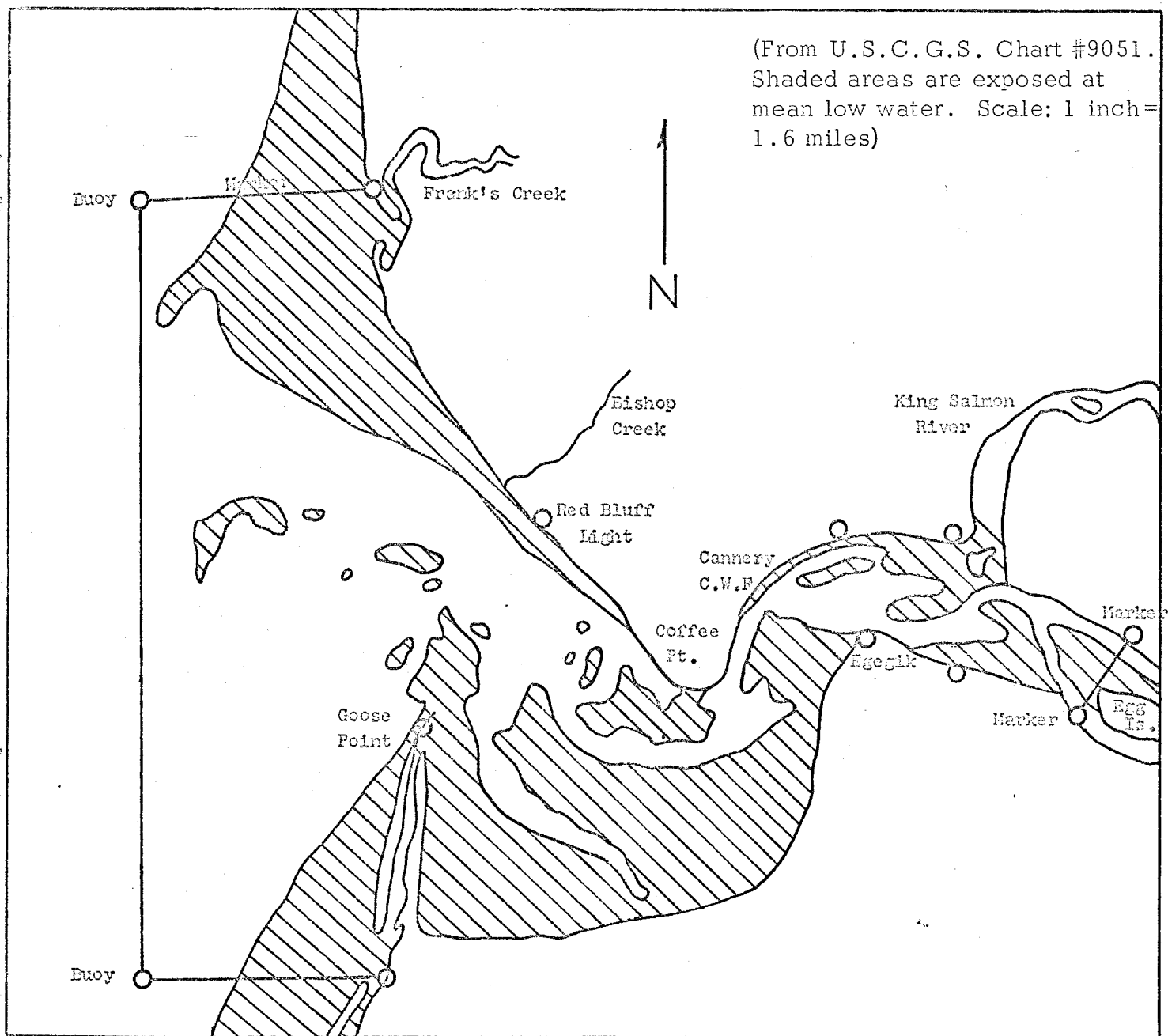


TABLE 26
EGEGIK DISTRICT, CATCH AND ESCAPEMENT OF RED SALMON
BY SEX BY AGE GROUP, 1966

	Age Group									TOTAL
	4 ₂	4 ₃	5 ₂	5 ₃	6 ₂	6 ₃	6 ₄	7 ₃	7 ₄	
<u>CATCH</u>										
Males:										
Number	10,780	--	57,887	119,966	--	483,382	9,370	--	9,483	690,868
Percent	1.56	--	8.38	17.36	--	69.97	1.36	--	1.37	100.00
Females:										
Number	7,296	--	112,573	136,595	610	1,120,743	23,840	413	8,236	1,410,306
Percent	0.52	--	7.98	9.69	0.04	79.47	1.69	0.03	0.58	100.00
Sexes Combined:										
Number	18,076	--	170,460	256,561	610	1,604,125	33,210	413	17,719	2,101,174
Percent	0.86	--	8.11	12.21	0.03	76.35	1.58	0.02	0.84	100.00
<u>ESCAPEMENT</u>										
Males:										
Number	1,206	--	14,743	70,649	--	281,107	3,657	--	1,420	372,782
Percent	0.32	--	3.95	18.95	--	75.41	0.99	--	0.38	100.00
Females:										
Number	465	233	13,962	70,300	--	337,186	7,195	--	2,123	431,464
Percent	0.11	0.06	3.23	16.29	--	78.15	1.67	--	0.49	100.00
Sexes Combined:										
Number	1,671	233	28,705	140,949	--	618,293	10,852	--	3,543	804,246
Percent	0.21	0.03	3.57	17.52	--	76.88	1.35	--	0.44	100.00
<u>CATCH AND ESCAPEMENT</u>										
Males:										
Number	11,986	--	72,630	190,615	--	764,489	13,027	--	10,903	1,063,650
Percent	1.13	--	6.83	17.92	--	71.87	1.22	--	1.03	100.00
Females:										
Number	7,761	233	126,535	206,895	610	1,457,929	31,035	413	10,359	1,841,770
Percent	0.42	0.01	6.87	11.24	0.03	79.16	1.69	0.02	0.56	100.00
Sexes Combined:										
Number	19,747	233	199,165	397,510	610	2,222,418	44,062	413	21,262	2,905,420
Percent	0.68	0.01	6.85	13.68	0.02	76.49	1.52	0.02	0.73	100.00

Table 27

EGEGIK COMMERCIAL CATCH
SEX COMPOSITION OF RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. in Samples		Percent		Commercial Catch	No. in Catch	
		Males	Females	Males	Females		Males	Females
Thru 6/25	7	302	547	35.6	64.4	160,188	57,027	103,161
6/28-7/2	6	284	577	33.0	67.0	619,226	204,345	414,881
7/3-7/6	7	286	657	30.3	69.7	875,561	265,295	610,266
7/7-8/6	5	214	367	36.8	63.2	446,199	164,201	281,998
TOTALS	25	1,086	2,148	32.88	67.12	2,101,174	690,868	1,410,306

Table 28

EGEGIK COMMERCIAL CATCH
AGE COMPOSITION OF MALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group						Total
			4 ₂	5 ₂	5 ₃ Percent	6 ₃	6 ₄	7 ₄	
Thru 6/25	7	302	2.6	11.3	13.9	72.2	---	---	100.0
6/28-7/2	6	284	1.1	5.3	17.2	73.9	0.4	2.1	100.0
7/3-7/6	7	286	2.1	9.8	17.1	67.8	1.8	1.4	100.0
7/7-8/6	5	214	0.9	8.9	19.2	67.8	2.3	0.9	100.0
TOTALS	25	1,086							
WEIGHTED PERCENTAGES			1.56	8.38	17.36	69.97	1.36	1.37	100.00

Table 29

EGEGIK COMMERCIAL CATCH
AGE COMPOSITION OF FEMALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	4 ₂	5 ₂	5 ₃	Age Group					Total
						6 ₂	6 ₃ Percent	6 ₄	7 ₃	7 ₄	
Thru 6/25	7	547	1.1	9.1	6.6	---	82.8	---	0.4	---	100.0
6/28-7/2	6	577	0.5	9.0	7.8	---	80.8	0.9	---	1.0	100.0
7/3-7/6	7	657	0.3	6.4	7.0	0.1	84.5	1.4	---	0.3	100.0
7/7-8/6	5	367	0.8	9.5	19.4	---	65.4	4.1	---	0.8	100.0
TOTALS	25	2,148									
WEIGHTED PERCENTAGES			0.52	7.98	9.69	0.04	79.47	1.69	0.03	0.58	100.00

Table 30

EGEGIK RIVER RED SALMON ESCAPEMENT, 1966

Date	Daily Counts	Daily Percent of Total	Accum. Count
6/23	0	0.00	0
24	0	0.00	0
25	6	0.00	6
26	0	0.00	6
27	0	0.00	6
28	0	0.00	6
29	12	0.00	18
30	0	0.00	18
7/ 1	270	0.03	288
2	9,762	1.21	10,050
3	84,054	10.45	94,104
4	52,248	6.50	146,352
5	72	0.01	146,424
6	0	0.00	146,424
7	3,774	0.47	150,198
8	139,656	17.37	289,854
9	239,382	29.77	529,236
10	126,102	15.68	655,338
11	42,708	5.31	698,046
12	4,206	0.52	702,252
13	51,306	6.38	753,558
14	20,544	2.55	774,102
15	12,264	1.53	786,366
16	8,172	1.02	794,538
17	786	0.08	795,324
18	1,896	0.24	797,220
19	1,152	0.14	798,372
20	2,436	0.30	800,808
21	2,088	0.26	802,896
22	576	0.07	803,472
23	708	0.09	804,180
24	66	0.01	804,246
TOTAL	804,246	99.99	804,246

Table 31

EGEGIK RIVER ESCAPEMENT, SEX COMPOSITION BY DATE FOR RED SALMON, 1966

Date	No. of Samples	No. in Samples		Percent		Escapement	No. in Escapement	
		Males	Females	Males	Females		Males	Females
6/23-7/10	6	288	338	46.0	54.0	655,338	301,455	353,883
7/11-24	6	319	347	47.9	52.1	148,908	71,327	77,581
TOTALS	12	607	685	46.35	53.65	804,246	372,782	431,464

Table 32

EGEGIK RIVER ESCAPEMENT,
AGE COMPOSITION OF MALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	Age Group						Total
			4 ₂	5 ₂	5 ₃ Percent	6 ₃	6 ₄	7 ₄	
6/23-7/10	6	288	0.4	3.4	20.1	74.7	1.0	0.4	100.0
7/11-24	6	319	---	6.3	14.1	78.4	0.9	0.3	100.0
TOTALS	12	607							
WEIGHTED PERCENTAGES			0.32	3.95	18.95	75.41	0.99	0.38	100.00

Table 33

EGEGIK RIVER ESCAPEMENT,
AGE COMPOSITION OF FEMALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	Age Group							Total
			4 ₂	4 ₃	5 ₂ Percent	5 ₃	6 ₃	6 ₄	7 ₄	
6/23-7/10	6	338	---	---	3.2	15.7	79.3	1.2	0.6	100.0
7/11-24	6	347	0.6	0.3	3.4	19.0	72.9	3.8	---	100.0
TOTALS	12	685								
WEIGHTED PERCENTAGES			0.11	0.06	3.23	16.29	78.15	1.67	0.49	100.00

UGASHIK DISTRICT

The fishing area in the Ugashik district (Figure 4) remained the same as in 1965 and no boundary changes were employed during the 1966 season.

The initial gear registration in this district was 236 units, an increase of 13 (6%) from the 1965 level. The number of drift boats that actively participated in the 1966 harvest fluctuated from approximately 80 to 102 units.

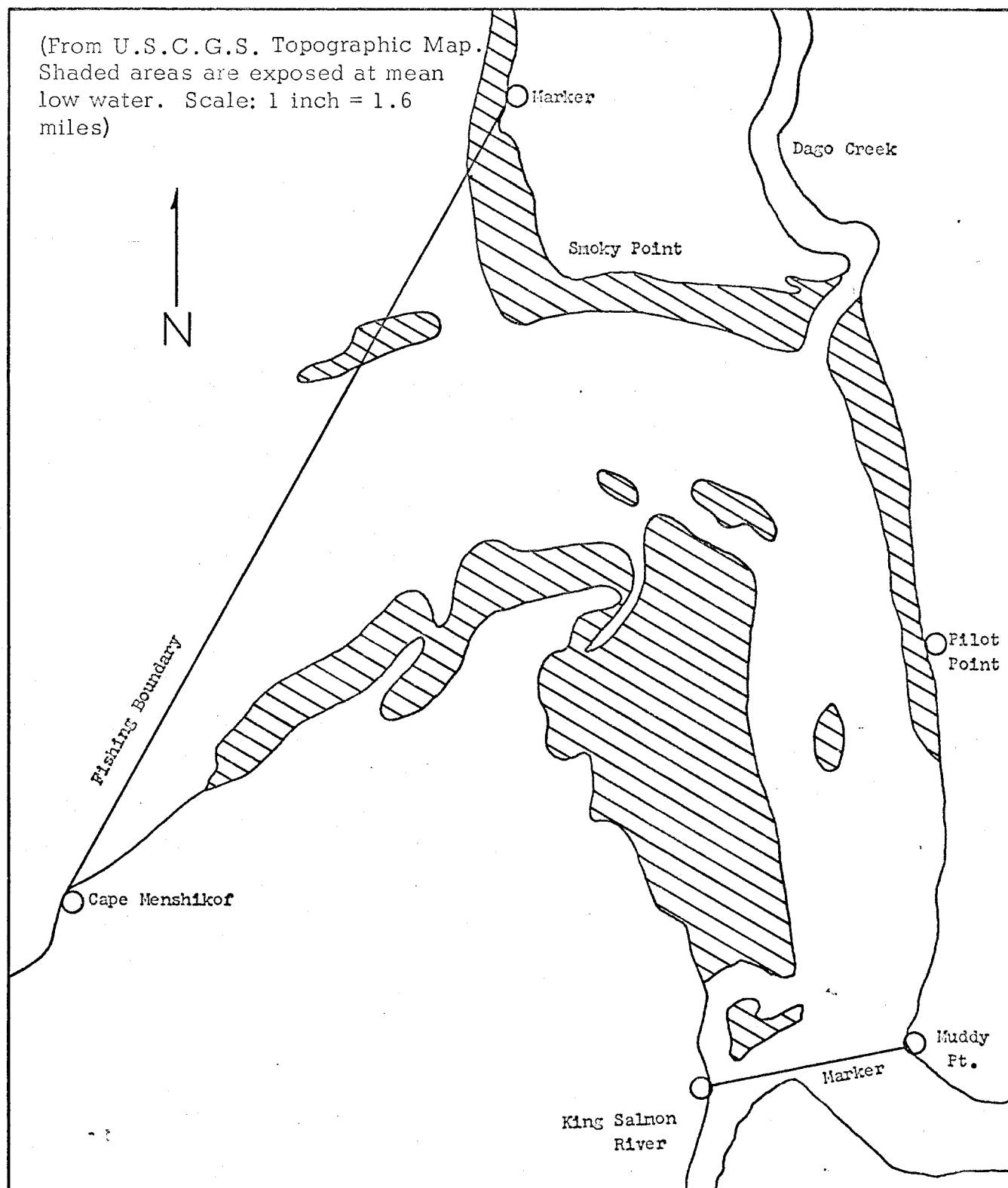
The total return of 1,149,894 red salmon was just short of the 1.23 million predicted for the district in 1966. Even though a desired escapement approximately twice the size of the anticipated allowable catch was obtained, the actual catch of 445,458 red salmon was comparable to the 15 year (1951-1965) average for this district. The 1966 escapement of 704,436 red salmon marked the second consecutive year of good escapement into the Ugashik system.

Because of only slightly restricted operation during the early part of the season, the Ugashik district fished for a greater number of hours than the six (1960-1965) year average. However, during the major part of the run, which reached a peak on July 7-8, fishing time was restricted to obtain two-thirds of the total return as escapement. With large simultaneous catches in the Naknek-Kvichak, Egegik and Nushagak districts limits of 2,000 and 2,500 fish per boat per period in the Ugashik district were imposed by the canneries.

The Ugashik district red salmon catch accounted for 5% of the total Bristol Bay catch and 93% of the district salmon catch. Other species of salmon were harvested as follows:

Kings:	1,916
Cohos:	533
Pinks:	11
Chums:	29,100

Figure 4. 1966 UGASHIK COMMERCIAL FISHING DISTRICT



UGASHIK DISTRICT, CATCH AND ESCAPEMENT OF RED SALMON
BY SEX AND AGE GROUP, 1966

48

	Age Group									
	4 ₁	4 ₂	4 ₃	5 ₂	5 ₃	6 ₂	6 ₃	6 ₄	7 ₄	TOTAL
<u>CATCH</u>										
Males:										
Number	260	15,244	341	56,714	41,377	--	56,710	--	--	170,646
Percent	0.15	8.93	0.20	33.24	24.25	--	33.23	--	--	100.00
Females:										
Number	487	5,546	--	110,011	28,015	139	129,780	347	487	274,812
Percent	0.18	2.02	--	40.03	10.19	0.05	47.22	0.13	0.18	100.00
Sexes Combined:										
Number	747	20,790	341	166,725	69,392	139	186,490	347	487	445,458
Percent	0.18	4.67	0.07	37.43	15.58	0.03	41.86	0.07	0.11	100.00
<u>ESCAPEMENT</u>										
Males:										
Number	--	17,680	156	109,966	57,008	--	83,100	--	--	267,910
Percent	--	6.60	0.06	41.04	21.28	--	31.02	--	--	100.00
Females:										
Number	585	30,582	1,389	157,234	93,629	40	153,067	--	--	436,526
Percent	0.13	7.01	0.32	36.02	21.45	0.01	35.06	--	--	100.00
Sexes Combined:										
Number	585	48,262	1,545	267,200	150,637	40	236,167	--	--	704,436
Percent	0.08	6.85	0.22	37.93	21.38	0.01	33.53	--	--	100.00
<u>TOTAL RETURN</u>										
Males:										
Number	260	32,924	497	166,680	98,385	--	139,810	--	--	438,556
Percent	0.06	7.51	0.11	38.01	22.43	--	31.88	--	--	100.00
Females:										
Number	1,072	36,128	1,389	267,245	121,644	179	282,847	347	487	711,338
Percent	0.15	5.08	0.20	37.57	17.10	0.02	39.76	0.05	0.07	100.00
Sexes Combined:										
Number	1,332	69,052	1,886	433,925	220,029	179	422,657	347	487	1,149,894
Percent	0.11	6.01	0.16	37.74	19.13	0.02	36.76	0.03	0.04	100.00

Table 35

UGASHIK COMMERCIAL CATCH
SEX COMPOSITION OF RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. in Samples		Percent		Commercial Catch	No. in Catch	
		Males	Females	Males	Females		Males	Females
Thru 7/3	5	298	558	34.8	65.2	106,632	37,108	69,524
7/5-7/12	5	345	549	38.6	61.4	294,439	113,653	180,786
7/15-9/17	1	168	207	44.8	55.2	44,387	19,885	24,502
TOTALS	11	811	1,314	38.31	61.69	445,458	170,646	274,812

Table 36

UGASHIK COMMERCIAL CATCH
AGE COMPOSITION OF MALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group						Total
			4 ₁	4 ₂	4 ₃ Percent	5 ₂	5 ₃	6 ₃	
Thru 7/3	5	298	0.7	5.7	---	41.6	17.8	34.2	100.0
7/5-7/12	5	345	---	10.1	0.3	31.0	25.8	32.8	100.0
7/15-9/17	1	168	---	8.3	---	30.4	27.4	33.9	100.0
TOTALS	11	811							
WEIGHTED PERCENTAGES			0.15	8.93	0.20	33.24	24.25	33.23	100.00

Table 37

UGASHIK COMMERCIAL CATCH
AGE COMPOSITION OF FEMALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group								Total
			4 ₁	4 ₂	5 ₂ Percent	5 ₃	6 ₂	6 ₃	6 ₄	7 ₄	
Thru 7/3	5	558	0.7	2.3	36.2	8.8	0.2	50.6	0.5	0.7	100.0
7/5-12	5	549	---	1.6	43.0	8.9	---	46.5	---	---	100.0
7/15-9/17	1	207	---	4.3	29.0	23.7	---	43.0	---	---	100.0
TOTALS	11	1,314									
WEIGHTED PERCENTAGES			0.18	2.02	40.03	10.19	0.05	47.22	0.13	0.18	100.00

Table 38

UGASHIK RIVER RED SALMON ESCAPEMENTS, 1966

Date	Daily Count	Daily Percent of Total	Accum. Count
7/ 8	0	0.00	0
9	0	0.00	0
10	0	0.00	0
11	75,060	10.66	75,060
12	77,976	11.07	153,036
13	25,590	3.63	178,626
14	66,048	9.38	244,674
15	53,412	7.58	298,086
16	28,950	4.11	327,036
17	76,938	10.92	403,974
18	6,816	0.97	410,790
19	246	0.03	411,036
20	85,116	12.08	496,152
21	148,296	21.05	644,448
22	42,150	5.98	686,598
23	3,450	0.49	690,048
24	2,310	0.33	692,358
25	1,896	0.27	694,254
26	1,404	0.20	695,658
27	1,650	0.23	697,308
28	1,464	0.21	698,772
29	1,656	0.24	700,428
30	390	0.06	700,818
31	462	0.07	701,280
8/ 1	1,554	0.22	702,834
2	948	0.13	703,782
3	204	0.03	703,986
4	282	0.04	704,268
5	168	0.02	704,436
TOTAL	704,436	100.00	704,436

Table 39

UGASHIK RIVER ESCAPEMENT, SEX COMPOSITION OF RED SALMON BY DATE, 1966

Date	No. of Samples	No. in Samples		Percent		Escapement	No. in Escapement	
		Males	Females	Males	Females		Males	Females
7/8-15	4	167	316	34.6	65.4	298,086	103,138	194,948
7/16-22	4	228	336	40.4	59.6	388,512	156,959	231,553
7/23-8/5	3	196	251	43.8	56.2	17,838	7,813	10,025
TOTALS	11	591	903	38.03	61.97	704,436	267,910	436,526

Table 40

UGASHIK RIVER ESCAPEMENT,
AGE COMPOSITION OF MALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	Age Group					Total
			4 ₂	4 ₃	5 ₂ Percent	5 ₃	6 ₃	
7/8-15	4	167	4.2	---	38.9	23.4	33.5	100.0
7/16-22	4	228	8.3	---	43.0	19.7	29.0	100.0
7/23-8/5	3	196	4.1	2.0	30.1	25.0	38.8	100.0
TOTALS	11	591						
WEIGHTED PERCENTAGES			6.60	0.06	41.04	21.28	31.02	100.00

Table 41

UGASHIK RIVER ESCAPEMENT,
AGE COMPOSITION OF FEMALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	Age Group							Total
			4 ₁	4 ₂	4 ₃	5 ₂ Percent	5 ₃	6 ₂	6 ₃	
7/8-15	4	316	0.3	6.6	---	38.0	18.4	---	36.7	100.0
7/16-22	4	336	---	7.2	0.6	34.5	24.1	---	33.6	100.0
7/23-8/5	3	251	---	10.4	---	32.6	19.5	0.4	37.1	100.0
TOTALS	11	903								
WEIGHTED PERCENTAGES			0.13	7.01	0.32	36.02	21.45	0.01	35.06	100.00

NUSHAGAK DISTRICT

The fishing area in the Nushagak district remained similar to that of 1965 with the exception of an inner boundary change to allow additional harvest of red salmon late in the season. A map of the district is shown in Figure 5 with shaded areas indicating portions of land exposed at mean low water. Final catch and escapement figures are given in Table 42.

The initial gear registration of 819 units was a slight decrease from the 1965 fishing effort. Commercial exploitation of early run king salmon stocks was not begun until well after the king season was underway due to price negotiations. Commercial operations began on June 13, two weeks later than normal.

Fishing effort in the Nushagak district decreased steadily throughout the king and red salmon season due to three factors: (1) relatively large red salmon predictions for the Kvichak and Egegik districts, (2) early season closure of the district to enable the Department to build up the early red salmon run and (3) the relative lateness of the red salmon run to the district.

Although the amount of gear fluctuated with each fishing period, reliable estimates of the average fishing effort present were 190 drift boats and 190 set nets. Effectiveness of the fishing fleet was further reduced as all but 20 boats were double-end sailboat conversions and skiffs. Consequently, the set net fishery took a larger portion of the catch than in previous years.

The red salmon catch of 1,170,271 represents approximately 13 percent of the total Bristol Bay catch. Of particular interest this season was the lateness of the red salmon run. On July 1 only 3 percent of the catch had been accounted for as against a normal of 28 percent. Almost continuous fishing from July 2 to July 16 accounted for approximately 93 percent of the total catch. The total return to the district was 2,800,997 red salmon.

Weather conditions throughout the season were poor and did hamper fishing effort to a large degree throughout the district.

The Nushagak district accounted for 30 percent of the total Bristol Bay catch of all species. In addition to the above average red salmon return, a record 3,779,310 pink salmon returned of which 2,337,066 were taken by the fishery. Total catch of other species included 58,184 king salmon, 129,344 chum salmon and 11,517 coho salmon.

The king salmon catch represents an average season even though fishing was greatly curtailed by the price dispute early in the season. However, the chum salmon catch was the smallest since 1955 and the coho salmon harvest was below average.

Escapement of red salmon past the fishery amounted to a district total of 1,630,726 with Wood River realizing an escapement of 1,208,682.

Sampling procedures remained the same as in 1965. An additional catch sampler operated from the Pacific Alaska Fisheries Cannery at Dillingham where data was obtained on the king and chum salmon catches.

Sample sex and age composition data for the Igushik catch is given in Tables 47-50. These samples represent a relatively pure sample of Igushik fish harvested (by set net and drift skiff) at the mouth of the Igushik River. To prevent biasing the Nushagak district sample with this pure Igushik sample, the Igushik sample sex and age composition was applied to the pure Igushik catch (obtained from cannery records and subtracted from the total Nushagak catch) while the Nushagak district sample data was applied to the Nushagak district catch minus the Igushik catch. The fish from these two groups were then combined to obtain the total Nushagak-Igushik district catch by sex by age class. It was necessary to combine the Igushik catch with the Nushagak district catch (prior to pro-rating this catch to the individual systems) since an unknown proportion of the Igushik run is harvested in the Nushagak district.

In 1966 a counting tower was not maintained on the Snake River. The escapement estimate of 4,500 red salmon was based on aerial surveys of the spawning grounds. Prior to 1963 the Wood River age and sex composition was used to approximate those of the Snake River. Sampling in 1963-1965 indicated that only four age classes commonly occur in the Snake River - 4₂, 5₂, 5₃ and 6₃. The percentage of these four age classes by sex in the Wood River escapement was used to estimate the sex and age composition of the 1966 Snake River escapement.

For the first time in 1966 a counting tower was operated on the main Nushagak River. The Nuyakuk red salmon escapement counts subtracted from the main river tower counts yielded an estimate of the total Nushagak-Mulchatna red salmon escapement. Nuyakuk River sex and age composition was used to estimate that of the Nushagak-Mulchatna.

The method described on pages 19 and 20 in the Naknek-Kvichak narrative was used to apportion the Nushagak-Igushik commercial catch to the individual river systems.

Figure 5. 1966 NUSHAGAK COMMERCIAL FISHING DISTRICT.

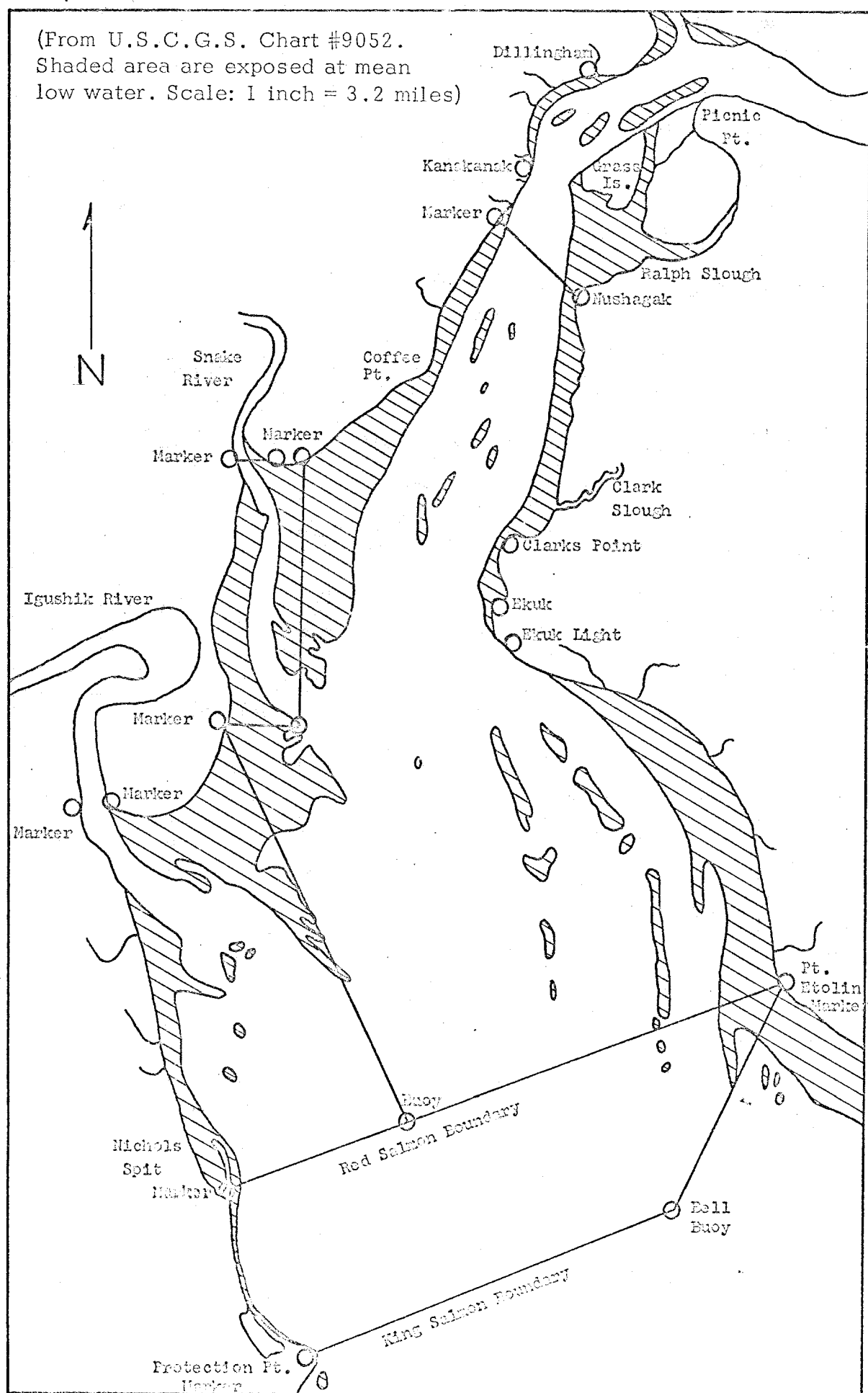


Table 42

NUSHAGAK-IGUSHIK DISTRICT, CATCH AND ESCAPEMENT
BY AGE GROUP, RED SALMON, 1966

	Age Group											
	3 ₁	4 ₁	4 ₂	4 ₃	5 ₁	5 ₂	5 ₃	6 ₂	6 ₃	6 ₄	7 ₄	TOTAL
<u>WOOD RIVER</u>												
Escapement	--	--	620,376	1,389	--	543,475	7,686	--	35,472	--	284	1,208,682
Catch	--	--	253,469	--	--	436,108	12,099	1,593	49,910	499	1,056	754,734
Subtotal	--	--	873,845	1,389	--	979,583	19,785	1,593	85,382	499	1,340	1,963,416
Percent	--	--	44.51	0.07	--	49.89	1.01	0.08	4.35	0.02	0.07	100.00
<u>IGUSHIK RIVER</u>												
Escapement	--	407	12,617	--	122	167,407	6,531	--	19,276	--	--	206,360
Catch	--	5,611	12,727	--	734	171,947	12,554	322	34,919	74	--	238,888
Subtotal	--	6,018	25,344	--	856	339,354	19,085	322	54,195	74	--	445,248
Percent	--	1.35	5.69	--	0.19	76.22	4.29	0.07	12.17	0.02	--	100.00
<u>SNAKE RIVER</u>												
Escapement	--	--	2,312	--	--	2,026	29	--	133	--	--	4,500
Catch	--	--	941	--	--	1,627	46	6	186	2	--	2,808
Subtotal	--	--	3,253	--	--	3,653	75	6	319	2	--	7,308
Percent	--	--	44.51	--	--	49.99	1.03	0.08	4.36	0.03	--	100.00
<u>NUYAKUK RIVER</u>												
Escapement	129	207	10,588	--	--	145,323	742	--	4,021	--	--	161,010
Catch	20	3,247	5,756	--	--	115,987	1,695	204	5,559	68	--	132,536
Subtotal	149	3,454	16,344	--	--	261,310	2,437	204	9,580	68	--	293,546
Percent	0.05	1.18	5.57	--	--	89.02	0.83	0.07	3.26	0.02	--	100.00
<u>NUSHAGAK-MULCHATNA</u>												
Escapement	40	66	3,299	--	--	45,286	229	--	1,254	--	--	50,174
Catch	6	1,035	1,801	--	--	36,121	523	64	1,734	21	--	41,305
Subtotal	46	1,101	5,100	--	--	81,407	752	64	2,988	21	--	91,479
Percent	0.05	1.20	5.58	--	--	88.99	0.82	0.07	3.27	0.02	--	100.00
<u>TOTAL NUSHAGAK-IGUSHIK DISTRICT</u>												
Escapement	169	680	649,192	1,389	122	903,517	15,217	--	60,156	--	284	1,630,726
Catch	26	9,893	274,694	--	734	761,790	26,917	2,189	92,308	664	1,056	1,170,271
Subtotal	195	10,573	923,886	1,389	856	1,665,307	42,134	2,189	152,464	664	1,340	2,800,997
Percent	0.01	0.38	32.98	0.05	0.03	59.46	1.50	0.08	5.44	0.02	0.05	100.00

Table 43

NUSHAGAK-IGUSHIK COMMERCIAL CATCH
SEX COMPOSITION OF RED SALMON BY FISHING PERIOD, 1966 ^{1/}

Period	No. of Samples	No. in Samples		Percent		Commercial Catch	No. in Catch	
		Males	Females	Males	Females		Males	Females
Thru 6/26	13	300	264	53.2	46.8	16,102	8,566	7,536
6/29-7/3	9	268	194	58.0	42.0	316,434	183,532	132,902
7/5-8/6	17	406	331	55.1	44.9	783,735	431,838	351,897
TOTALS	39	974	789	55.89	44.11	1,116,271	623,936	492,335

^{1/} Igushik beach catches not included

Table 44

NUSHAGAK-IGUSHIK COMMERCIAL CATCH
AGE COMPOSITION OF MALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group								Total
			3 ₁	4 ₁	4 ₂	5 ₁	5 ₂	5 ₃	6 ₂	6 ₃	
			Percent								
Thru 6/26	13	300	0.3	0.7	28.7	---	60.7	1.3	---	8.3	100.0
6/29-7/3	9	268	---	0.4	53.0	0.4	39.2	3.7	---	3.3	100.0
7/5-8/6	17	406	---	1.2	28.8	---	58.2	2.7	0.5	8.6	100.0
TOTALS	39	974									
WEIGHTED PERCENTAGES			---	0.96	35.92	0.12	52.64	2.97	0.35	7.04	100.00

Table 45

NUSHAGAK-IGUSHIK COMMERCIAL CATCH
AGE COMPOSITION OF FEMALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group								Total
			4 ₁	4 ₂	5 ₂	5 ₃	6 ₂	6 ₃	6 ₄	7 ₄	
			Percent								
Thru 6/26	13	264	0.4	2.3	83.3	1.1	0.4	12.5	---	---	100.0
6/29-7/3	9	194	0.5	0.5	84.5	1.6	---	12.4	0.5	---	100.0
7/5-8/6	17	331	0.9	12.1	78.9	1.2	---	6.6	---	0.3	100.0
TOTALS	39	789									
WEIGHTED PERCENTAGES			0.78	8.82	80.48	1.31	0.01	8.26	0.13	0.21	100.00

Table 46

NUSHAGAK-IGUSHIK DISTRICT COMMERCIAL CATCH, AGE COMPOSITION
OF RED SALMON, BOTH SEXES COMBINED, 1966

8

	Age Group										
	3 ₁	4 ₁	4 ₂	5 ₁	5 ₂	5 ₃	6 ₂	6 ₃	6 ₄	7 ₄	TOTAL
MALES:											
Number	26	5,976	224,100	734	328,475	18,561	2,159	43,905	--	--	623,936
Percent	--	0.96	35.92	0.12	52.64	2.97	0.35	7.04	--	--	100.00
FEMALES:											
Number	--	3,862	43,417	--	396,227	6,432	30	40,647	664	1,056	492,335
Percent	--	0.78	8.82	--	80.48	1.31	0.01	8.26	0.13	0.21	100.00
SEXES COMBINED:											
Number	26	9,838	267,517	734	724,702	24,993	2,189	84,552	664	1,056	1,116,271
Percent	--	0.88	23.97	0.06	64.92	2.24	0.20	7.58	0.06	0.09	100.00

Table 47

IGUSHIK COMMERCIAL CATCH
SEX COMPOSITION OF RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. in Samples		Percent		Commercial Catch	No. in Catch	
		Males	Females	Males	Females		Males	Females
Thru 7/3	5	274	307	47.2	52.8	29,000	13,688	15,312
7/5- 8/6	7	190	212	47.3	52.7	25,000	11,825	13,175
TOTALS	12	464	519	47.25	52.75	54,000	25,513	28,487

Table 48

IGUSHIK COMMERCIAL CATCH
AGE COMPOSITION OF MALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group					Total
			4 ₁	4 ₂	5 ₂ Percent	5 ₃	6 ₃	
Thru 7/3	5	274	0.4	32.5	57.3	1.4	8.4	100.0
7/5-8/6	7	190	---	13.1	61.6	9.5	15.8	100.0
TOTALS	12	464						
WEIGHTED PERCENTAGES			0.22	23.50	59.29	5.16	11.83	100.00

Table 49

IGUSHIK COMMERCIAL CATCH
AGE COMPOSITION OF FEMALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group				Total
			4 ₂	5 ₂	5 ₃ Percent	6 ₃	
Thru 7/3	5	307	1.6	85.0	0.7	12.7	100.0
7/5-8/6	7	212	7.1	67.9	3.8	21.2	100.0
TOTALS	12	519					
WEIGHTED PERCENTAGES			4.14	77.09	2.14	16.63	100.00

Table 50

IGUSHIK COMMERCIAL CATCH, AGE COMPOSITION
OF RED SALMON, BOTH SEXES COMBINED, 1966

	Age Group					
	4 ₁	4 ₂	5 ₂	5 ₃	6 ₃	TOTAL
MALES:						
Number	55	5,997	15,127	1,316	3,018	25,513
Percent	0.22	23.50	59.29	5.16	11.83	100.00
FEMALES:						
Number	--	1,180	21,961	608	4,738	28,487
Percent	--	4.14	77.09	2.14	16.63	100.00
SEXES COMBINED:						
Number	55	7,177	37,088	1,924	7,756	54,000
Percent	0.10	13.29	68.68	3.56	14.37	100.00

Table 51

WOOD RIVER FINAL RED SALMON DAILY ESCAPEMENT COUNTS, 1966

Date	Daily Count	Daily Percent of Total	Accum. Count
6/20	24	0.00	24
21	60	0.00	84
22	18	0.00	102
23	60	0.00	162
24	72	0.01	234
25	60	0.00	294
26	120	0.01	414
27	96	0.01	510
28	1,290	0.11	1,800
29	2,154	0.18	3,954
30	1,542	0.13	5,496
7/ 1	2,106	0.17	7,602
2	11,172	0.93	18,774
3	30,690	2.54	49,464
4	110,082	9.11	159,546
5	251,394	20.80	410,940
6	168,966	13.98	579,906
7	233,538	19.32	813,444
8	124,044	10.26	937,488
9	62,592	5.18	1,000,080
10	11,886	0.98	1,011,966
11	20,634	1.71	1,032,600
12	77,496	6.41	1,110,096
13	47,502	3.93	1,157,598
14	16,284	1.35	1,173,882
15	9,078	0.75	1,182,960
16	6,132	0.51	1,189,092
17	6,492	0.54	1,195,584
18	5,358	0.44	1,200,942
19	2,382	0.20	1,203,324
20	2,208	0.18	1,205,532
21	1,044	0.09	1,206,576
22	972	0.08	1,207,548
23	528	0.04	1,208,076
24	0	0.00	1,208,076
25	558	0.05	1,208,634
26	48	0.00	1,208,682
TOTAL	1,208,682	100.00	1,208,682

Table 52

WOOD RIVER ESCAPEMENT, SEX COMPOSITION OF RED SALMON BY DATE, 1966

Date	No. of Samples	No. in Samples		Percent		Escapement	No. in Escapement	
		Males	Females	Males	Females		Males	Females
6/20-7/4	6	229	334	40.7	59.3	159,546	64,935	94,611
7/5-7	3	217	319	40.5	59.5	653,898	264,829	389,069
7/8-11	4	219	326	40.2	59.8	219,156	88,101	131,055
7/12-26	5	252	429	37.0	63.0	176,082	65,150	110,932
TOTALS	18	917	1,408	39.96	60.04	1,208,682	483,015	725,667

Table 53

WOOD RIVER ESCAPEMENT, AGE COMPOSITION OF MALE RED SALMON
BY DATE, 1966

Period	No. of Samples	No. of Fish	Age Group				Total
			4 ₂	5 ₂	5 ₃ Percent	6 ₃	
6/20-7/4	6	229	58.5	36.7	1.3	3.5	100.0
7/5-7	3	217	44.7	49.7	0.5	5.1	100.0
7/8-11	4	219	39.7	58.5	---	1.8	100.0
7/12-26	5	252	51.2	46.8	0.4	1.6	100.0
TOTALS	18	917					
WEIGHTED PERCENTAGES			46.52	49.17	0.50	3.81	100.00

Table 54

WOOD RIVER ESCAPEMENT,
AGE COMPOSITION OF FEMALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	4 ₂	4 ₃	Age Group				Total
					5 ₂	5 ₃ Percent	6 ₃	7 ₄	
6/20-7/4	6	334	66.8	---	29.3	1.2	2.4	0.3	100.0
7/5-7	3	319	44.9	0.3	51.4	0.3	3.1	---	100.0
7/8-11	4	326	64.7	---	33.5	0.9	0.9	---	100.0
7/12-26	5	429	65.8	0.2	31.0	1.6	1.4	---	100.0
TOTALS	18	1,408							
WEIGHTED PERCENTAGES			54.53	0.19	42.17	0.72	2.35	0.04	100.00

Table 55

WOOD RIVER ESCAPEMENT, AGE COMPOSITION FOR RED SALMON,
BOTH SEXES COMBINED, 1966

	4 ₂	4 ₃	AGE GROUP		6 ₃	7 ₄	TOTAL
			5 ₂	5 ₃			
MALES:							
Number	224,699	--	237,480	2,429	18,407	--	483,015
Percent	46.52	--	49.17	0.50	3.81	--	100.00
FEMALES:							
Number	395,677	1,389	305,995	5,257	17,065	284	725,667
Percent	54.53	0.19	42.17	0.72	2.35	0.04	100.00
SEXES COMBINED:							
Number	620,376	1,389	543,475	7,686	35,472	284	1,208,682
Percent	51.33	0.11	44.96	0.64	2.94	0.02	100.00

Table 56

IGUSHIK RIVER FINAL RED SALMON DAILY ESCAPEMENT COUNTS, 1966

Date	Daily Count	Daily Percent of Total	Accum. Count
7/ 2	842	0.41	842
3	1,122	0.54	1,964
4	96	0.05	2,060
5	48	0.02	2,108
6	108	0.05	2,216
7	36,138	17.51	38,354
8	35,154	17.04	73,508
9	43,002	20.84	116,510
10	16,236	7.87	132,746
11	5,868	2.84	138,614
12	4,608	2.23	143,222
13	7,506	3.64	150,728
14	18,030	8.74	168,758
15	17,856	8.65	186,614
16	9,948	4.82	196,562
17	2,940	1.42	199,502
18	1,956	0.95	201,458
19	1,146	0.56	202,604
20	1,530	0.74	204,134
21	918	0.44	205,052
22	552	0.27	205,604
23	516	0.25	206,120
24	240	0.12	206,360
TOTAL	206,360	100.00	206,360

Table 57

IGUSHIK RIVER ESCAPEMENT, SEX COMPOSITION OF RED SALMON BY DATE, 1966

Date	No. of Samples	No. in Samples		Percent		Escapement	No. in Escapement	
		Males	Females	Males	Females		Males	Females
7/2-9	3	255	248	50.7	49.3	116,510	59,071	57,439
7/10-15	5	245	341	41.8	58.2	70,104	29,303	40,801
7/16-24	4	283	284	49.9	50.1	19,746	9,853	9,893
TOTALS	12	783	793	47.60	52.40	206,360	98,227	108,133

Table 58

IGUSHIK RIVER ESCAPEMENT,
AGE COMPOSITION OF MALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	Age Group					Total
			4 ₁	4 ₂	5 ₂ Percent	5 ₃	6 ₃	
7/2-9	3	255	---	3.5	82.8	0.8	12.9	100.0
7/10-15	5	245	---	7.8	78.3	5.7	8.2	100.0
7/16-24	4	283	1.1	7.1	87.2	0.4	4.2	100.0
TOTALS	12	783						
WEIGHTED PERCENTAGES			0.11	5.14	81.90	2.22	10.63	100.00

Table 59

IGUSHIK RIVER ESCAPEMENT,
AGE COMPOSITION OF FEMALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	4 ₁	4 ₂	Age Group			6 ₃	Total
					5 ₁	5 ₂ Percent	5 ₃		
7/2-9	3	248	0.4	6.0	---	81.5	2.0	10.1	100.0
7/10-15	5	341	---	8.2	0.3	77.4	7.6	6.5	100.0
7/16-24	4	284	0.7	7.8	---	86.6	1.0	3.9	100.0
TOTALS	12	793							
WEIGHTED PERCENTAGES			0.28	7.00	0.11	80.42	4.02	8.17	100.00

Table 60

IGUSHIK RIVER ESCAPEMENT, AGE COMPOSITION OF RED SALMON,
BOTH SEXES COMBINED, 1966

	4 ₁	4 ₂	AGE GROUP		5 ₃	6 ₃	TOTAL
			5 ₁	5 ₂			
MALES:							
Number	108	5,053	--	80,447	2,182	10,437	98,227
Percent	0.11	5.14	--	81.90	2.22	10.63	100.00
FEMALES:							
Number	299	7,564	122	86,960	4,349	8,839	108,133
Percent	0.28	7.00	0.11	80.42	4.02	8.17	100.00
SEXES COMBINED:							
Number	407	12,617	122	167,407	6,531	19,276	206,360
Percent	0.20	6.11	0.06	81.12	3.17	9.34	100.00

Table 61

NUYAKUK RIVER FINAL RED SALMON DAILY ESCAPEMENT COUNTS, 1966

Date	Daily Count	Daily Percent of Total	Accum. Count
7/ 8	12	0.01	12
9	120	0.07	132
10	210	0.13	342
11	318	0.20	660
12	402	0.25	1,062
13	546	0.34	1,608
14	2,280	1.42	3,888
15	44,856	27.86	48,744
16	48,702	30.25	97,446
17	25,278	15.70	122,724
18	10,914	6.78	133,638
19	9,060	5.63	142,698
20	7,656	4.75	150,354
21	4,458	2.77	154,812
22	2,406	1.49	157,218
23	1,284	0.80	158,502
24	1,026	0.64	159,528
25	432	0.27	159,960
26	162	0.10	160,122
27	48	0.03	160,170
28	78	0.05	160,248
29	60	0.04	160,308
30	90	0.05	160,398
31	30	0.02	160,428
8/ 1	102	0.06	160,530
2	54	0.03	160,584
3	36	0.02	160,620
4	72	0.04	160,692
5	6	0.00	160,698
6	30	0.02	160,728
7	60	0.04	160,788
8	42	0.03	160,830
9	60	0.04	160,890
10	54	0.03	160,944
11	66	0.04	161,010
TOTAL	161,010	100.00	161,010

Table 62

NUYAKUK RIVER ESCAPEMENT, SEX COMPOSITION OF RED SALMON BY DATE, 1966

Date	No. of Samples	No. in Samples		Percent		Escapement	No. in Escapement	
		Males	Females	Males	Females		Males	Females
7/8-16	5	140	322	30.3	69.7	97,446	29,526	67,920
7/17-8/11	4	255	248	50.7	49.3	63,564	32,227	31,337
TOTALS	9	395	570	38.35	61.65	161,010	61,753	99,257

Table 63

NUYAKUK RIVER ESCAPEMENT,
AGE COMPOSITION OF MALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	Age Group						Total
			3 ₁	4 ₁	4 ₂	5 ₂ Percent	5 ₃	6 ₃	
7/8-16	5	140	---	0.7	13.6	82.2	1.4	2.1	100.0
7/17-8/11	4	255	0.4	---	4.7	93.7	---	1.2	100.0
TOTALS	9	395							
WEIGHTED PERCENTAGES			0.21	0.34	8.96	88.20	0.66	1.63	100.00

Table 64

NUYAKUK RIVER ESCAPEMENT,
AGE COMPOSITION OF FEMALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	Age Group				Total
			4 ₂	5 ₂	5 ₃ Percent	6 ₃	
7/8-16	5	322	5.0	91.0	0.3	3.7	100.0
7/17-8/11	4	248	5.3	92.7	0.4	1.6	100.0
TOTALS	9	570					
WEIGHTED PERCENTAGES			5.09	91.54	0.33	3.04	100.00

Table 65

NUYAKUK RIVER ESCAPEMENT, AGE COMPOSITION OF RED SALMON,
BOTH SEXES COMBINED, 1966

	AGE GROUP						
	3 ₁	4 ₁	4 ₂	5 ₂	5 ₃	6 ₃	TOTAL
MALES:							
Number	129	207	5,531	54,467	413	1,006	61,753
Percent	0.21	0.34	8.96	88.20	0.66	1.63	100.00
FEMALES:							
Number	--	--	5,057	90,856	329	3,015	99,257
Percent	--	--	5.09	91.54	0.33	3.04	100.00
SEXES COMBINED:							
Number	129	207	10,588	145,323	742	4,021	161,010
Percent	0.08	0.12	6.58	90.26	0.46	2.50	100.00

TOGIAK DISTRICT

The fishing area in the Togiak district (Figure 6) remained similar to that of 1965 and no boundry changes were employed during the 1966 season.

Initial gear registration in this district was 102 units, a slight increase over 1965. The majority of the fishing fleet were double-end sailboat conversions and skiffs, however 7 set nets were fished in the Osviak section.

The Togiak River section accounted for approximately 91 percent of the total district catch, with the Osviak and Kulukak sections contributing the remainder.

Total red salmon return was 322,797, which was very close to the predicted return of 313,000. Weather conditions in 1966 were very poor with high winds interfering with the fishing fleet throughout the season. The total red salmon catch was 199,799, while 122,998 escaped the fishery to the spawning grounds. Both catch and escapement in 1966 were above average and the harvest rate of 61.9 percent was similar to previous years.

Record catches of coho and pink salmon were made in 1966, while chum salmon catches were the smallest in the past 4 years. Catch of other species were as follows:

Kings . . .	9,967
Cohos . . .	15,864
Pinks . . .	13,545
Chums . . .	95,410

Figure 6. 1966 TOGIAC COMMERCIAL FISHING DISTRICT

(From U.S.C.G.S. Chart #8802.
Shaded areas are exposed at mean
low water. Scale: 1 inch = 10 miles)

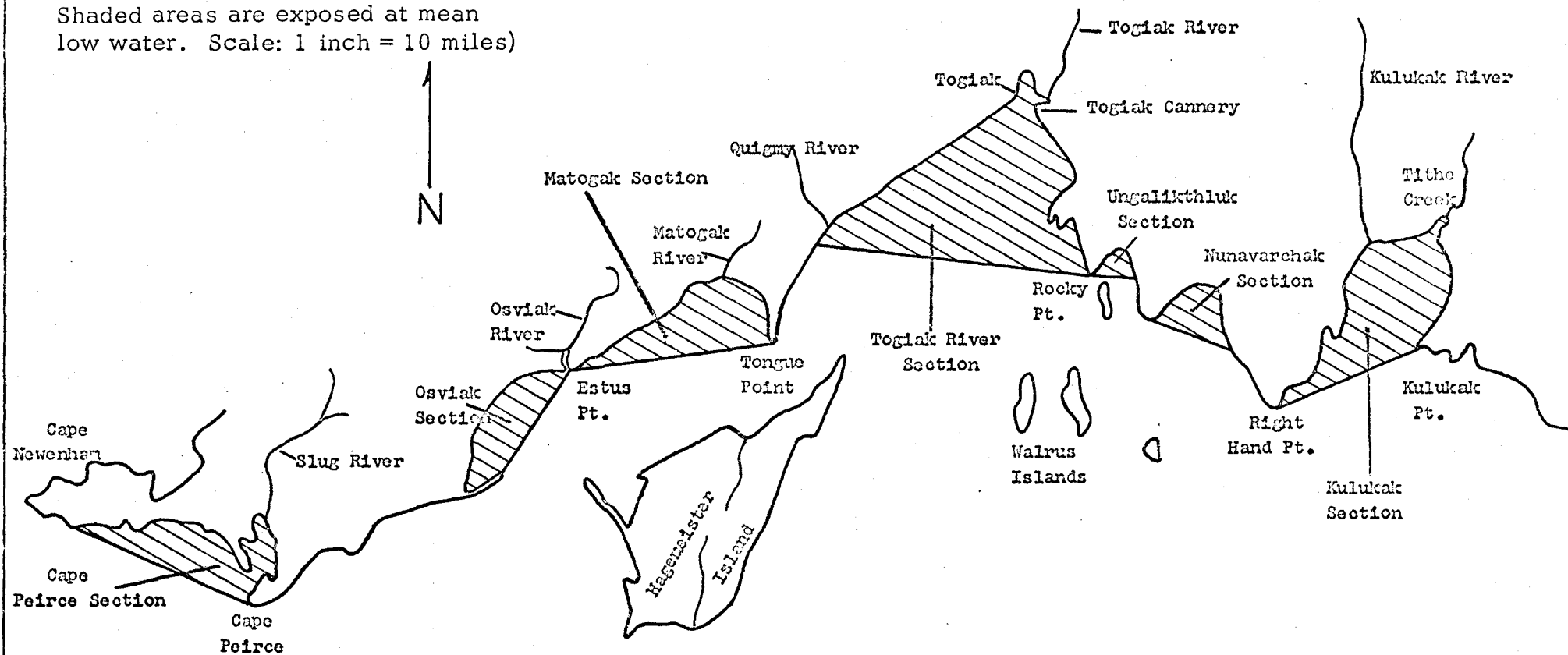


Table 66

TOGIAC DISTRICT CATCH AND ESCAPEMENT,
AGE COMPOSITION OF RED SALMON, 1966

	4 ₁	4 ₂	5 ₁	Age Group		5 ₃	6 ₂	6 ₃	7 ₄	TOTAL
				5 ₂						
COMMERCIAL CATCH:										
Number	4,668	31,375	38	116,656	11,597	224	35,159	82	199,799	
Percent	2.34	15.70	0.02	58.39	5.80	0.11	17.60	0.04	100.00	
ESCAPEMENT:										
Number	1,890	15,006	--	89,620	3,098	--	13,384	--	122,998	
Percent	1.54	12.20	--	72.87	2.51	--	10.88	--	100.00	
TOTAL DISTRICT:										
Number	6,558	46,381	38	206,276	14,695	224	48,543	82	322,797	
Percent	2.03	14.37	0.01	63.90	4.55	0.07	15.04	0.03	100.00	

Table 67

TOGIAK COMMERCIAL CATCH,
SEX COMPOSITION OF RED SALMON BY FISHING PERIOD, 1966

Period	No. in Sample	No. in Samples		Percent		Commercial Catch	No. in Catch	
		Males	Females	Males	Females		Males	Females
Thru 7/2	10	240	510	32.0	68.0	28,156	9,010	19,146
7/4-9	5	204	390	34.3	65.7	54,473	18,684	35,789
7/11-8/27	11	342	808	29.7	70.3	117,170	34,799	82,371
TOTALS	26	786	1,708	31.28	68.72	199,799	62,493	137,306

Table 68

TOGIAK COMMERCIAL CATCH
AGE COMPOSITION OF MALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group						Total
			4 ₁	4 ₂	5 ₂ Percent	5 ₃	6 ₂	6 ₃	
Thru 7/2	10	240	2.9	7.9	78.3	2.1	---	8.8	100.0
7/4-9	5	204	3.9	15.7	62.8	3.4	---	14.2	100.0
7/11-8/27	11	342	0.6	23.4	47.3	8.8	0.3	19.6	100.0
TOTALS	26	786							
WEIGHTED PERCENTAGES			1.92	18.86	56.40	6.22	0.17	16.43	100.00

Table 69

TOGIAK COMMERCIAL CATCH
AGE COMPOSITION OF FEMALE RED SALMON BY FISHING PERIOD, 1966

Period	No. of Samples	No. of Fish	Age Group								Total
			4 ₁	4 ₂	5 ₁ Percent	5 ₂	5 ₃	6 ₂	6 ₃	7 ₄	
Thru 7/2	10	510	2.0	3.3	0.2	84.1	1.2	0.2	9.0	---	100.0
7/4-9	5	390	5.4	6.7	---	76.6	1.8	---	9.5	---	100.0
7/11-8/27	11	808	1.4	20.1	---	46.0	8.3	0.1	24.0	0.1	100.0
TOTALS	26	1,708									
WEIGHTED PERCENTAGES			2.53	14.26	0.03	59.29	5.61	0.09	18.13	0.06	100.00

Table 70

TOGIAC COMMERCIAL CATCH
AGE COMPOSITION OF RED SALMON, 1966

	Age Group								
	4 ₁	4 ₂	5 ₁	5 ₂	5 ₃	6 ₂	6 ₃	7 ₄	TOTAL
MALES:									
Number	1,199	11,788	--	35,249	3,886	104	10,267	--	62,493
Percent	1.92	18.86	--	56.40	6.22	0.17	16.43	--	100.00
FEMALES:									
Number	3,469	19,587	38	81,407	7,711	120	24,892	82	137,306
Percent	2.53	14.26	0.03	59.29	5.61	0.09	18.13	0.06	100.00
SEXES COMBINED:									
Number	4,668	31,375	38	116,656	11,597	224	35,159	82	199,799
Percent	2.34	15.70	0.02	58.39	5.80	0.11	17.60	0.04	100.00

TOGIAC RIVER FINAL RED SALMON DAILY ESCAPEMENT COUNTS, 1966

Date	Daily Count	Daily Percent of Total	Accum. Count
7/ 5	6	0.01	6
6	66	0.07	72
7	84	0.09	156
8	120	0.13	276
9	282	0.31	558
10	138	0.15	696
11	288	0.32	984
12	216	0.24	1,200
13	282	0.31	1,482
14	1,140	1.25	2,622
15	4,476	4.91	7,098
16	9,396	10.31	16,494
17	9,726	10.68	26,220
18	6,060	6.65	32,280
19	5,262	5.78	37,542
20	9,258	10.16	46,800
21	7,092	7.78	53,892
22	7,056	7.75	60,948
23	4,338	4.76	65,286
24	3,804	4.18	69,090
25	2,160	2.37	71,250
26	3,048	3.35	74,298
27	2,160	2.37	76,458
28	2,670	2.93	79,128
29	1,938	2.13	81,066
30	1,230	1.35	82,296
31	1,044	1.15	83,340
8/ 1	942	1.03	84,282
2	1,098	1.20	85,380
3	570	0.63	85,950
4	1,026	1.13	86,976
5	1,638	1.80	88,614
6	942	1.03	89,556
7	708	0.78	90,264
8	180	0.20	90,444
9	204	0.22	90,648
10	102	0.11	90,750
11	168	0.18	90,918
12	138	0.15	91,056
13	42	0.05	91,098
TOTAL	91,098	100.00	91,098

Table 72

TOGIAC RIVER ESCAPEMENT, SEX COMPOSITION OF RED SALMON BY DATE, 1966

Date	No. of Samples	No. in Samples		Percent		Escapement	No. in Escapement	
		Males	Females	Males	Females		Males	Females
7/5-8/13	11	221	368	37.5	62.5	91,098	34,162	56,936
TOTALS	11	221	368	37.50	62.50	91,098	34,162	56,936

Table 73

TOGIAC RIVER ESCAPEMENT,
AGE COMPOSITION OF MALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	Age Group					Total
			4 ₁	4 ₂	5 ₂ Percent	5 ₃	6 ₃	
7/5-8/13	11	221	1.8	12.2	75.1	0.9	10.0	100.0
TOTALS	11	221						
WEIGHTED PERCENTAGES			1.80	12.20	75.10	0.90	10.00	100.00

Table 74

TOGIAC RIVER ESCAPEMENT,
AGE COMPOSITION OF FEMALE RED SALMON BY DATE, 1966

Period	No. of Samples	No. of Fish	Age Group					Total
			4 ₁	4 ₂	5 ₂ Percent	5 ₃	6 ₃	
7/5-8/13	11	368	1.4	12.2	71.5	3.5	11.4	100.0
TOTALS	11	368						
WEIGHTED PERCENTAGES			1.40	12.20	71.50	3.50	11.40	100.00

Table 75

TOGIAC RIVER ESCAPEMENT, AGE COMPOSITION OF RED SALMON,
Both Sexes Combined, 1966

	4 ₁	4 ₂	Age Group 5 ₂	5 ₃	6 ₃	TOTAL
MALES:						
Number	615	4,168	25,656	307	3,416	34,162
Percent	1.80	12.20	75.10	0.90	10.00	100.00
FEMALES:						
Number	797	6,946	40,709	1,993	6,491	56,936
Percent	1.40	12.20	71.50	3.50	11.40	100.00
SEXES COMBINED:						
Number	1,412	11,114	66,365	2,300	9,907	91,098
Percent	1.55	12.20	72.85	2.52	10.88	100.00

Table 76

TOGIAC TRIBUTARIES, KULAKAK SYSTEM AND TOTAL TOGIAC DISTRICT
RED SALMON ESCAPEMENT BY AGE CLASS, 1966

	Age Group					TOTAL
	4 ₁	4 ₂	5 ₂	5 ₃	6 ₃	
TOGIAC TRIBUTARIES ^{1/}	196	1,598	9,550	328	1,428	13,100
KULAKAK SYSTEM ^{1/}	282	2,294	13,705	470	2,049	18,800
TOGIAC RIVER	1,412	11,114	66,365	2,300	9,907	91,098
TOTAL TOGIAC DISTRICT						
Number	1,890	15,006	89,620	3,098	13,384	122,998
Percent	1.54	12.20	72.87	2.51	10.88	100.00

^{1/} Age composition (sexes combined) of Togiak River escapement used for these systems.

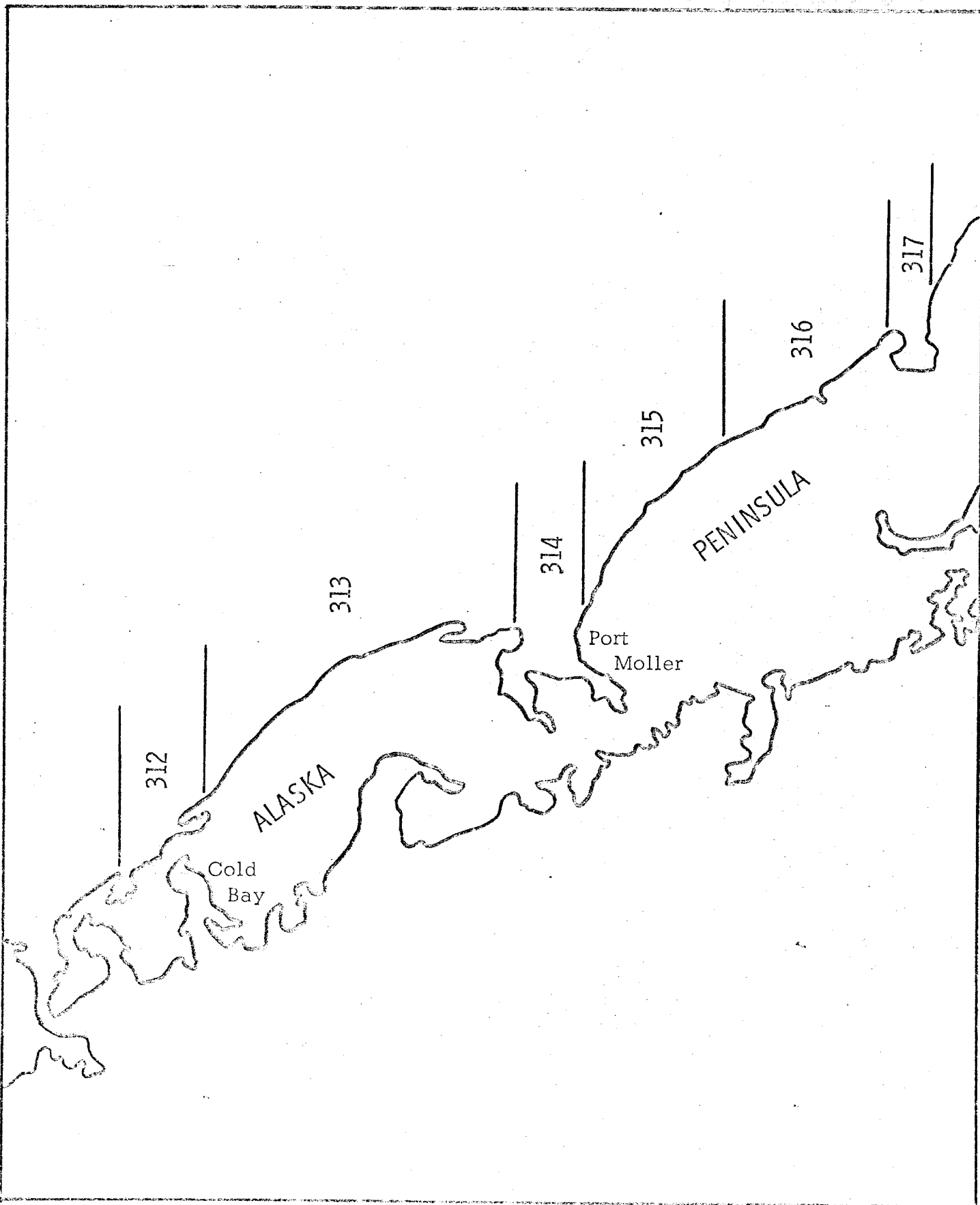
NORTH SIDE ALASKA PENINSULA FISHING DISTRICT

The 1966 North Peninsula red salmon fishery followed the general pattern of the last few years, the runs being weak and concentrated in the Bear River and Nelson Lagoon areas.

The Bear River fishery commenced July 7 and continued through mid-August. The catch and escapements paralleled each other through the season, each totaling 160,000 red salmon. This constitutes a good escapement, but the catches are far below the 3-400,000 of a few years ago. The Sandy River system, which contributes to the Bear River fishery, appeared to have a return of only 40,000 reds, of which only 5,000 reached the spawning grounds; a sad showing in comparison to the apparent norm of 30-45,000 spawners plus 70-100,000 catch.

Again the Nelson Lagoon red salmon runs were below normal, catches totaling 60,000 and escapements 35,000 vs past catches of 70-90,000 plus 50,000 escapement. Effort was nominal and the red runs light northeast of Cape Seniavin (20,000 catch: 40,000 escapement) and southwest of Nelson Lagoon (16,000 catch: 20,000 escapement).

Figure 7. MAP OF IMPORTANT RED SALMON STATISTICAL AREAS ON NORTH SIDE OF ALASKA PENINSULA, 1966.



BEAR RIVER DAILY RED SALMON ESCAPEMENT COUNTS, 1966

Date		Daily Counts	Daily % of Total	Accum. Count
June	25	52	0.03	52
	26	—	—	52
	27	—	—	52
	28	233	0.14	285
	29	442	0.28	727
	30	2,110	1.31	2,837
July	1	1,598	0.99	4,435
	2	861	0.54	5,296
	3	1,928	1.20	7,224
	4	675	0.42	7,899
	5	477	0.30	8,376
	6	639	0.40	9,015
	7	1,254	0.78	10,269
	8	14,085	8.76	24,354
	9	12,001	7.47	36,355
	10	4,766	2.97	41,121
	11	1,538	0.96	42,659
	12	238	0.15	42,897
	13	429	0.27	43,326
	14	1,911	1.19	45,237
	15	2,424	1.51	47,661
	16	2,177	1.35	49,838
	17	2,511	1.56	52,349
	18	3,599	2.24	55,948
	19	2,486	1.55	58,434
	20	3,537	2.20	61,971
	21	4,231	2.63	66,202
	22	2,091	1.30	68,293
	23	2,144	1.33	70,437
	24	3,444	2.14	73,881
	25	3,137	1.95	77,018
	26	995	0.62	78,013
	27	1,713	1.06	79,726
	28	5,473	3.40	85,199
	29	10,095	6.28	95,294
	30	6,102	3.80	101,376
	31	2,841	1.77	104,237
August	1	1,138	0.71	105,375
	2	4,311	2.68	109,686
	3	5,227	3.25	114,913
	4	5,581	3.47	120,494
	5	2,411	1.50	122,905
	6	1,441	0.90	124,346
	7	2,463	1.53	126,809
	8	1,327	0.83	128,136
	9	2,697	1.68	130,833
	10	3,276	2.04	134,109
	11	6,842	4.25	140,951
	12	4,537	2.82	145,488

Continued.....

Table 77(Cont.)

BEAR RIVER DAILY RED SALMON ESCAPEMENT COUNTS, 1966 (CONT.)

Date	Daily Counts		Daily % of Total	Accum. Count
August	13	1,674	1.04	147,162
	14	1,077	0.67	148,239
	15	1,777	1.10	150,016
	16	1,746	1.09	151,762
	17	1,572	0.98	153,334
	18	3,792	2.36	157,126
	19	1,597	0.99	158,723
	20	784	0.49	159,507
	21	621	0.39	160,128
	22	609	0.38	160,737
<hr/>				
TOTALS	160,737		100.00	160,737

NELSON RIVER DAILY RED SALMON ESCAPEMENT COUNTS, 1966

Date	Daily Counts	Daily % of Total	Accum. Counts
June 30	536	1.57	536
July 1	820	2.40	1,356
2	613	1.79	1,969
3	627	1.83	2,596
4	1,163	3.40	3,759
5	159	0.46	3,918
6	859	2.51	4,777
7	1,849	5.40	6,626
8	780	2.28	7,406
9	1,968	5.75	9,374
10	1,542	4.51	10,916
11	900 $\frac{1}{2}$	2.63	11,816
12	400 $\frac{1}{2}$	1.17	12,216
13	400 $\frac{1}{2}$	1.17	12,616
14	400 $\frac{1}{2}$	1.17	13,016
15	350 $\frac{1}{2}$	1.02	13,366
	4,000 $\frac{2}{2}$	11.69	17,366
16	371	1.08	17,757
17	771	2.25	18,508
18	651	1.90	19,159
19	250	0.73	19,409
20	483	1.41	19,892
21	618	1.81	20,510
22	494	1.45	21,004
23	381	1.11	21,385
24	298	0.87	21,683
25	577	1.69	22,260
26	111	0.32	22,371
27	459	1.34	22,830
28	166	0.48	22,996
29	203	0.60	23,199
30	578	1.69	23,777
31	1,297	3.79	25,074
Aug. 1	5,988	17.50	31,062
2	589	1.72	31,651
3	535	1.56	32,186
4	1,609	4.70	33,795
5	288	0.84	34,083
6	1		34,084
7	104	0.30	34,188
8	36	0.11	34,224

Continued.....

NELSON RIVER DAILY RED SALMON ESCAPEMENT COUNTS, 1966 (CONT.)

Date	Daily Counts	Daily % of Total	Accum. Counts
August 9	-18	-0.05	34,206
10	4	0.01	34,210
11	12	0.04	34,222
TOTALS	34,222	100.00	34,222

1/ Estimates. High water halted counts

2/ Adjustment based on aerial survey.

NORTH SIDE ALASKA PENINSULA

Estimates of red salmon escapement based on aerial surveys, 1966

Statistical Area and Stream No. Stream Name Location			Survey Date	Red Salmon Escapement Daily Season Total		
311-20.12	Pogromni R.	W.end Unimak Is.	Aug. 19	200	200	No Fishery
-30.06	Divide Ck.	Urilia Bay	Aug. 5	100		Fishery
			Aug. 19	100	100	
-30.07	Whaleback Mtn.Ck.	Urilia Bay	July 6	-		Fishery
			Aug. 5	5,650		
			Aug. 19	3,000	8,650	
-30.08	Christianson Lgn.	Urilia Bay	Aug. 5	100		Fishery
			Aug. 19	600	600	
-30.09	Mudhole	Urilia Bay	Aug. 5	250		Fishery
			Aug. 19	1,500	1,500	
-30.10	Clear Lagoon	Urilia Bay	July 6	-		Fishery
			Aug. 5	600		
			Aug. 19	1,200	1,200	
-40.1	Emil's River	N-side Unimak Is.	July 6	-		No Fishery
			Aug. 5	-		
			Aug. 19	200	200	
-50.2	Swanson Lgn.	N-side Unimak Is.	July 6	200		Fishery
			Aug. 5	200		
			Aug. 17	550		
			Aug. 28	500	550	

TOTAL NORTH UNIMAK RED SALMON ESCAPEMENT 13,000

312-20.6	Bluegill Lake	Izembek Bay	July 2	-		No Fishery
			Aug. 28	250	250	
-40.1	Moffet Bay R.	Izembek Bay	July 2	-		No Fishery
			July 20	1,750		
			Aug. 6	3,150		
			Aug. 28	1,900	3,350	
-40.3	Moffet Point	Izembek Bay	July 2	-		No Fishery
			Aug. 4	3,000	3,000	

TOTAL IZEMBEK BAY RED SALMON ESCAPEMENT 6,600

Continued.....

Table 79 (Cont.)

NORTH SIDE ALASKA PENINSULA

Estimates of red salmon escapement based on aerial surveys, 1966

Statistical Area and Stream No.			Survey Date	Red Salmon Escapement		
Stream Name		Location		Daily	Season Total	
313-10.02	-	Gerstle Bay	July 21	200		No Fishery
			Aug. 4	130	200	
-10.05	Cathedral R.	Gerstle Bay	Aug. 4	-		No Fishery
			Aug. 19	460	460	
-10.06		Cape Leontovich	July 21	1,000		No Fishery
			Aug. 4	-	1,000	
-10.11	-	Black Hills	July 21	300		No Fishery
			Aug. 19	250		
			Aug. 30	500	500	
-10.14	Steelhead Ck.	Black Hills	July 21	100		No Fishery
			Aug. 19	100	100	
-30.3	Nelson R.	Nelson Ign. (see tower data)			34,222	Fishery
TOTAL AREA 313 RED SALMON ESCAPEMENT					36,482	
314-20.6	Grass Valley	Herendeen Bay	July 21	-		Fishery
			Aug. 16	600	600	
TOTAL AREA 314 RED SALMON ESCAPEMENT					600	
315-11.2	Bear River	N. Port Moller (see tower data)			160,737	Fishery
-12.0	Sandy River	N. Port Moller	July 6	20		No Fishery
			Aug. 8	325		
			Aug. 16	1,000		
			Aug. 31	5,000	5,000	
TOTAL AREA 315 RED SALMON ESCAPEMENT					165,737	
316-10.5	Ocean River	Nr. Ilnik	July 6	-		Fishery
			July 17	2,833		
			Aug. 8	2,870	3,000	
-10.6	Willie Ck.	Ilnik	July 6	400		Fishery
			July 17	4,190		
			Aug. 8	12,600	12,600	
-20.1	Ilnik	Ilnik	July 6	3,403		Fishery
			Aug. 8	14,000	14,000	
TOTAL AREA 316 RED SALMON ESCAPEMENT					29,600	

Continued.....

95

Estimates of red salmon escapement based on aerial surveys, 1966

Statistical						
Area and			Survey Red Salmon Escapement			
Stream No.	Stream Name	Location	Date	Daily	Season Total	
317.7	Meshik River	Port Heiden	July 18	1,059		Fishery
			Aug. 8	9,215	<u>9,215</u>	
	TOTAL AREA 317 RED SALMON ESCAPEMENT				<u>9,215</u>	
318-20.6	Cinder River	False Ugashik	July 18	1,230		No Fishery
			Aug. 8	2,680	<u>2,900</u>	
	TOTAL AREA 318 RED SALMON ESCAPEMENT				<u>2,900</u>	
TOTAL NORTH SIDE ALASKA PENINSULA RED SALMON ESCAPEMENT					264,134	

NORTH SIDE ALASKA PENINSULA AND SOUTH UNIMAK FISHERY

Red Salmon Catch By Week By Statistical Area, 1966

Area of Catch	Week of Catch	Red Salmon Catch ^{1/}	Accum. Catch
284 - South Unimak	June 5 - 11	8,482	8,482
	June 12-18	120,651	129,133
	June 19-25	263,660	392,793
	June 26-July 2	135,973	528,766
	July 3-9	321	529,087
	July 10-16	31	529,118
	July 17-23	624	529,742
	July 24-30	1,393	531,135
2 Note: Only the June catch could have any influence on the N. side Peninsula Fishery.			
311 - North Unimak	June 5 - 11	302	302
	June 12-18	1,845	2,147
	June 19-25	2,611	4,758
	June 26-July 2	3,711	8,469
	July 3-9	3,852	12,321
	July 10-16	54	12,375
	July 17-23	278	12,653
	July 24-30	303	12,956
	July 31-Aug. 6	739	13,695
	August 7-13	946	14,641
	August 14-20	40	14,681
	August 21-27	-----	14,681
	Aug. 28-Sept. 3	1,378	16,059
312 - Izembek Bay	July 3-9	132	132
	July 10-16	2,259	2,391
		-----	2,391
	August 28-Sept.3	14	2,405
313 - Nelson Lagoon	June 12 - 18	11	11
	June 19 - 25	6,948	6,959
	June 26-July 2	13,658	20,617
	July 3 - 9	21,162	41,779
	July 10 - 16	8,038	49,817
	July 17-23	4,263	54,080
	July 24 -30	2,220	56,300
	July 31 - August 6	1,566	57,866
	August 7-13	818	58,684
	August 14-20	230	58,914
	August 21-27	75	58,989
	August 28-Sept. 3	46	59,035

Continued.....

NORTH SIDE ALASKA PENINSULA AND SOUTH UNIMAK FISHERY (CONT.)

Red Salmon Catch By Week By Statistical Area, 1966

Area of Catch	Week of Catch	Red Salmon Catch ^{1/}	Accum. Catch
315 - Bear River ³ Sandy River	July 3-9	35,401	35,401
	July 10-16	23,978	59,379
	July 17-23	25,577	84,956
	July 24-30	29,906	114,862
	July 31-Aug. ⁶	26,117	140,979
	August 7-13	8,851	149,830
	August 14-20	2,713	152,543
	August 21-27	77	152,620
3. Sandy River run weak and not fished.			
316 - Ilnik	July 10-16	9,745	9,745
	July 17-23	1,268	11,013
317 - Port Heiden	June 12-18	73	73
	June 19-25	379	452
	June 26-July 2	2,537	2,989
	July 3-9	3,105	6,094
	July 10-16	1,265	7,359
	July 17-23	651	8,010

1. All catches taken from field records

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